

# INPLASY

## The impact of cannabis use on clinical outcomes following total hip and knee arthroplasty: a systematic review and meta-analysis

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### ADMINISTRATIVE INFORMATION

**Support** - "2019 National Administration of Traditional Chinese Medicine's Project for Building Evidence-Based Capacity in Traditional Chinese Medicine" (2019XZZX-GK004).

**Review Stage at time of this submission** - Data analysis.

**Conflicts of interest** - None declared.

**INPLASY registration number:** INPLASY202380085

**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 20 August 2023 and was last updated on 20 August 2023.

### INTRODUCTION

**Review question / Objective** In recent years, with the legalization of cannabis and its increasing medical applications, there has been widespread attention on its use in clinical treatment. Cannabis is a medicinal compound extracted from plants of the Cannabis genus, and its active components are known as cannabinoids. Throughout history, cannabinoids have been utilized to treat various ailments, offering effects such as pain relief, sedation, anti-inflammatory, antispasmodic, antidepressant, and anti-asthmatic properties. Hip and knee joint diseases are common conditions that significantly impact patients' quality of life and functionality. To address these diseases, hip and knee joint replacement surgeries have been widely adopted. However, as cannabis becomes more prevalent, an increasing number of patients are using

tetrahydrocannabinol (THC) and other cannabidiol (CBD) compounds before and after hip and knee joint replacement surgeries to alleviate pain and facilitate recovery. Simultaneously, the recreational use of cannabis is also on the rise, leading to a growing population of individuals with Cannabis Use Disorder (CUD). These individuals may also undergo hip and knee joint replacement surgeries, but a comprehensive and consistent conclusion regarding the potential postoperative effects of cannabis use in these patients is lacking. To investigate the potential impact of cannabis use on outcomes following hip and knee joint replacement surgeries, we conducted a meta-analysis.

**Condition being studied** Patients may experience certain side effects after undergoing joint replacement surgeries due to long-term cannabis drug use.

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## METHODS

**Participant or population** Patients have experience with cannabis drugs and undergo total knee arthroplasty replacement or total hip arthroplasty.

**Intervention** Cannabis; tetrahydrocannabinol; cannabidiol.

**Comparator** Blank control group.

**Study designs to be included** Prospective or retrospective cohort study.

**Eligibility criteria** None.

**Information sources** PUBMED, Embase, Web of science.

**Main outcome(s)** Prosthesis complications, Medical complications, Thrombus, Morphine equivalents.

**Quality assessment / Risk of bias analysis** Newcastle-Ottawa Scale.

**Strategy of data synthesis** The analysis was conducted using RevMan 5 software. A random-effects model was employed to perform a weighted analysis of the data and calculate the 95% Confidence Interval (CI). For dichotomous variables, the calculation included the Risk Ratio (RR) and its corresponding 95% Confidence Interval. Continuous variables were assessed using the Weighted Mean Difference (WMD) and its associated 95% CI. Heterogeneity was evaluated using the  $I^2$  statistic.

**Subgroup analysis** None.

**Sensitivity analysis** None.

**Country(ies) involved** China.

**Keywords** cannabis, arthroplasty, impact of cannabis use, meta-analysis.

### Contributions of each author

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