

# INPLASY PROTOCOL

To cite: Xu et al. A systematic review and meta-analysis of outcomes following unicompartmental knee arthroplasty versus total knee arthroplasty for unicompartmental knee osteoarthritis. Inplasy protocol 202330003. doi: 10.37766/inplasy2023.3.0003

Received: 02 March 2023

Published: 02 March 2023

**Corresponding author:**  
Renbin Li

renbin\_li@163.com

**Author Affiliation:**  
Southern Medical University  
Zhujiang University.

**Support:** None.

**Review Stage at time of this submission:** Preliminary searches.

**Conflicts of interest:**  
None declared.

## A systematic review and meta-analysis of outcomes following unicompartmental knee arthroplasty versus total knee arthroplasty for unicompartmental knee osteoarthritis

Xu, ZT<sup>1</sup>; Li, RB<sup>2</sup>.

**Review question / Objective:** To conduct a systematic review and meta-analysis of randomized controlled trials comparing outcomes following unicompartmental knee arthroplasty versus total knee arthroplasty for patients with unicompartmental knee osteoarthritis.

**Condition being studied:** Knee osteoarthritis is a common disease in elderly population and its treatment strategies consist of non-operative treatment and surgery. Arthroplasty is a main surgery for this condition, while the optimal selection between unicompartmental knee arthroplasty and total knee arthroplasty remains debatable. We aim to collect RCTs comparing these two techniques in treatment of knee osteoarthritis and make a meta-analysis in order to provide high level of evidence for future decision-making for this issue.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 02 March 2023 and was last updated on 02 March 2023 (registration number INPLASY202330003).

### INTRODUCTION

**Review question / Objective:** To conduct a systematic review and meta-analysis of randomized controlled trials comparing outcomes following unicompartmental knee arthroplasty versus total knee arthroplasty for patients with unicompartmental knee osteoarthritis.

**Rationale:** To systematic review and synthesize data from randomized controlled trials on the controversial clinical issue.

**Condition being studied:** Knee osteoarthritis is a common disease in elderly population and its treatment strategies consist of non-operative treatment and surgery. Arthroplasty is a

main surgery for this condition, while the optimal selection between unicompartmental knee arthroplasty and total knee arthroplasty remains debatable. We aim to collect RCTs comparing these two techniques in treatment of knee osteoarthritis and make a meta-analysis in order to provide high level of evidence for future decision-making for this issue.

## METHODS

**Search strategy:** Search terms: "unicompartmental knee" OR "partial knee", "total knee", "random\*". Electronic databases: PubMed, Embase, Cochrane Library databases, Web of Science.

**Participant or population:** Patients with unicompartmental knee osteoarthritis.

**Intervention:** Unicompartmental knee arthroplasty.

**Comparator:** Total knee arthroplasty.

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

**Eligibility criteria:** (1) patients with isolated knee OA and the classification of OA did not exceed grade II; (2) comparison between UKA and TKA; (3) randomized controlled trials; (4) studies reporting clinical outcomes, complications, and revisions of two surgical groups; (5) follow-up of at least 1 year; (6) when multiple reports by the same author were selected, we preferred the most recently published one.

**Information sources:** Electronic databases: PubMed, Embase, Cochrane Library databases, Web of Science.

**Main outcome(s):** Primary outcomes: Knee Society Score (KSS), Oxford Knee Score (OKS), High-Activity Arthroplasty Score (HAAS), and range of motion (ROM). Effect measures: Mean, Mean Difference.

**Additional outcome(s):** Secondary outcomes: EuroQol-5 Dimensions visual analogue scale in the three-level version

(EQ-5D-3L VAS), complications, and failure rates. Effect measures: Rate of incidents, Relative risk (RR).

**Data management:** We use meta-analysis to pool data from included RCTs.

**Quality assessment / Risk of bias analysis:** We use the Cochrane Risk of Bias Assessment Tool to assess the quality of included RCTs.

**Strategy of data synthesis:** For dichotomous variables, we selected relative risks (RRs) as an indicator of synthesized results.

For the continuous variables, we used the mean differences (MDs) as the indicator of synthesized results.

To calculate 95% confidence intervals (CI) for all effect sizes.

**Subgroup analysis:** None.

**Sensitivity analysis:** None.

**Language restriction:** Restriction of studies: in English.

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

**Keywords:** Unicompartmental Knee Arthroplasty (UKA), Total Knee Arthroplasty (TKA), Randomised controlled trials (RCT), Meta-analysis, PRISMA, Osteoarthritis (OA).

**Dissemination plans:** We aim to publish this study on a Journal relative to Orthopedics or Sports Medicine in English.

**Contributions of each author:**

Author 1 - Zhiteng Xu - Author 1 performed the literature search, screen of articles, quality of assessment, data extraction, statistical analysis.

Email: sdudrxu@163.com

Author 2 - Renbin Li - Author 2 drafted the manuscript and submitted it to Journal.

Email: renbin\_li@163.com