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# Title: **How to Measure Physical Function in Clinical Trials on Patients Undergoing Total or Partial Knee Arthroplasty? A Systematic Review**

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For this work the Authors have no Conflicts of Interest to declare.





# Introduction

- There is a need to improve reporting standards in Orthopedics and Sports Medicine (1, 2).
- An OMERACT core domain set for knee total joint replacement (TJR) in hip and knee has been defined for making arthroplasty trials better comparable (3).
- There are many options for reporting aspects of function (4).
- The purpose of our study was to summarize the current trends in the literature in terms of outcome measurements for evaluating physical function.

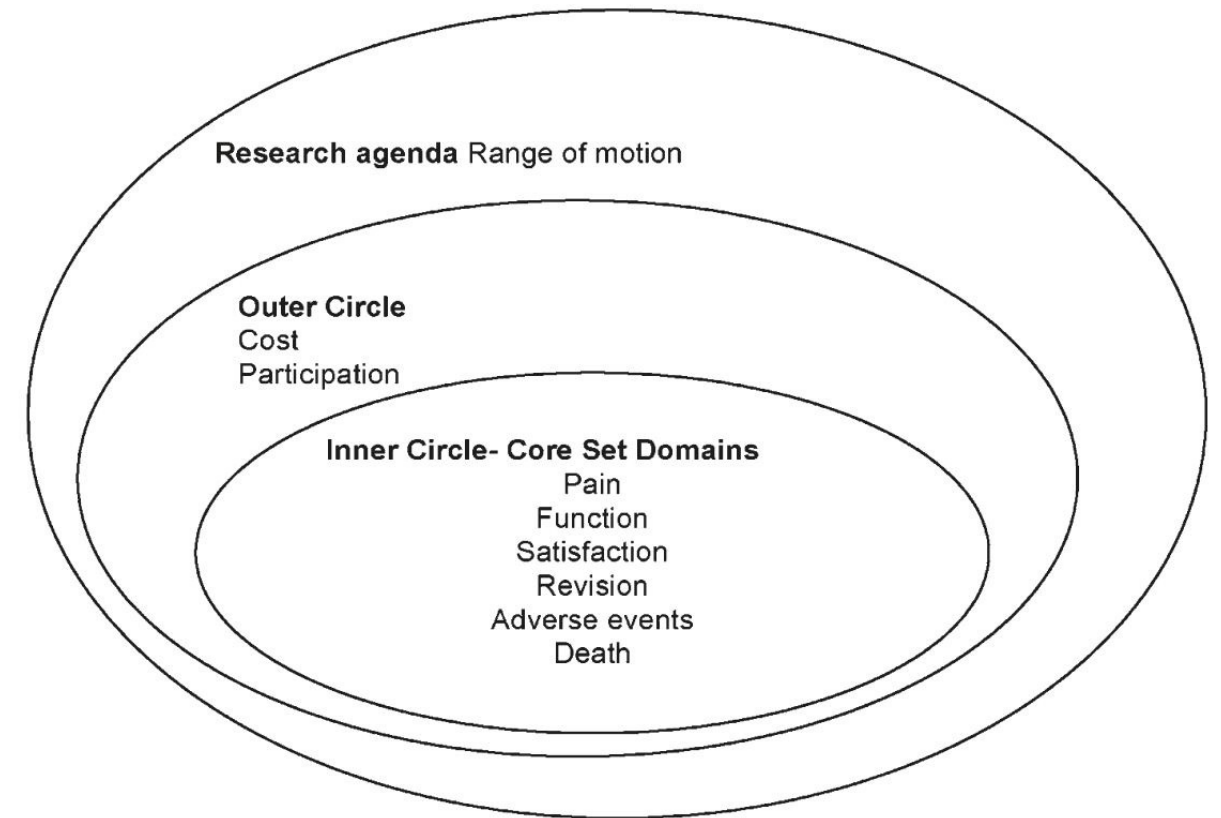


Figure 1. Core domain set for outcome domains for TJR clinical trials.



# Methods

- Author guidelines for Systematic Reviews have been followed (2)
- Databases: MEDLINE, Cinhal, Web of Science and Cochrane library were queried utilizing keywords pertinent to TKA, UKA, physical function, clinical trials, measures of outcome.
- Clinical trials on knee joint replacement were included only if published in the last 5 years and reporting data on functional outcomes and pain.
- Articles that had as a main topic anesthesia, tourniquet use, or tranexamic acid were excluded. Descriptive statistics was used to summarize the evidence.

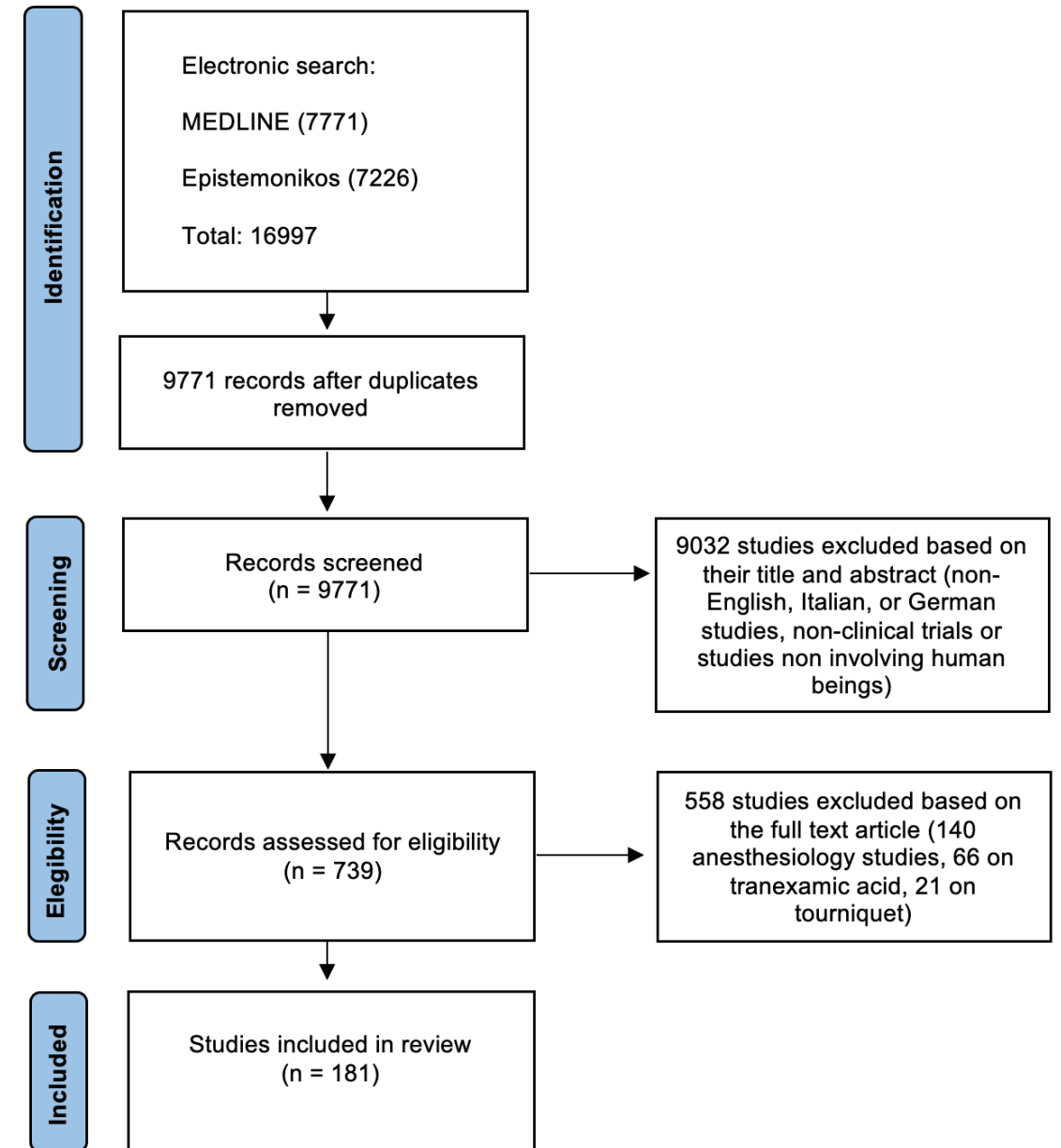
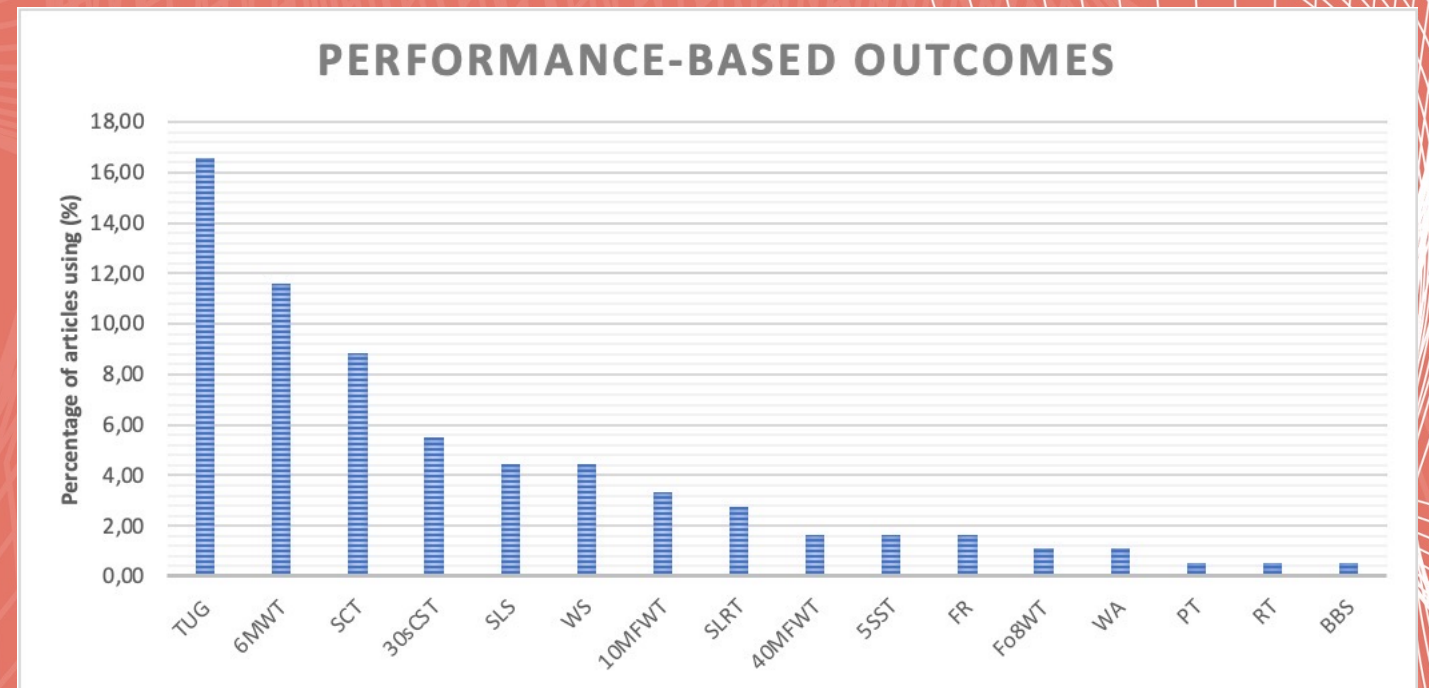
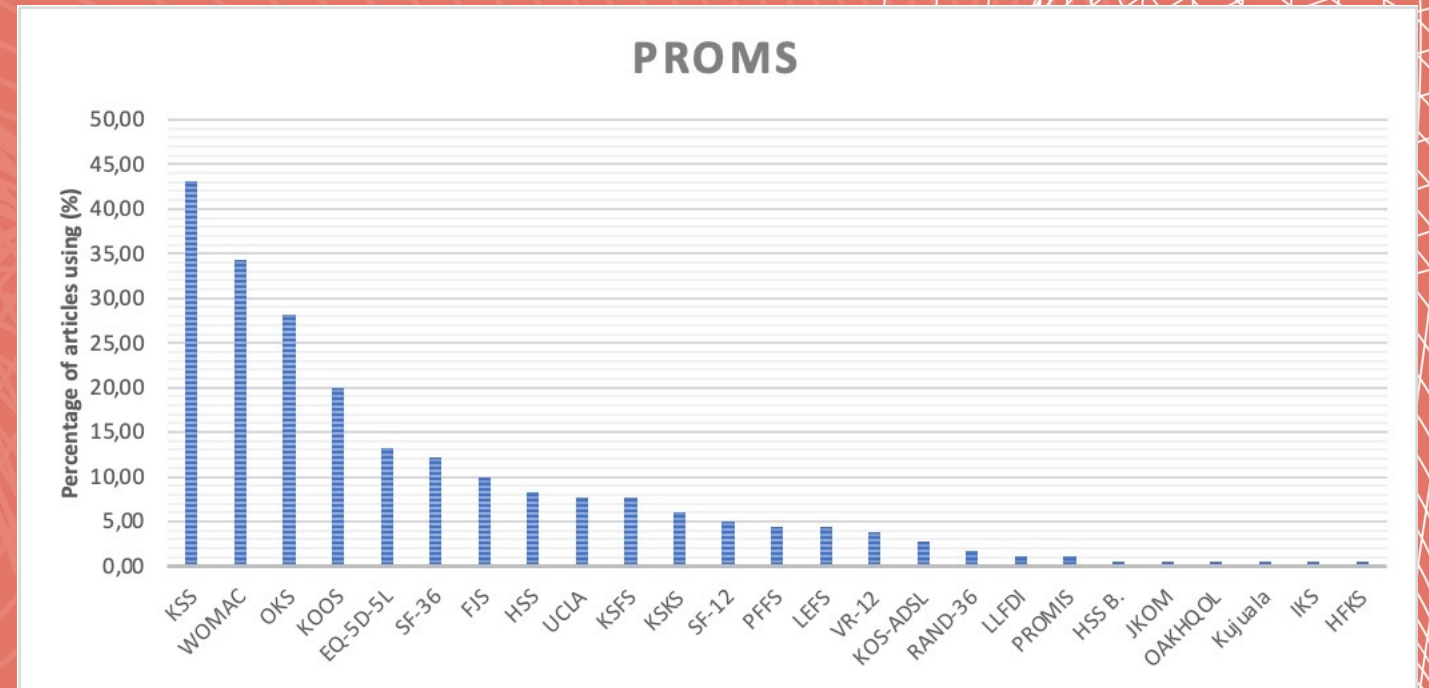


Figure 2 PRISMA Flow Diagram (6)



# Results

One-hundred-and-eighty-one articles met the inclusion criteria. Overall, 50 different outcome measurements were used in the studies to evaluate clinical outcomes after knee arthroplasty. The most adopted Patient Reported Outcomes measures were Knee Society Score (KSS) in 78 (43,1%) studies, Western Ontario and McMaster Universities Arthritis Index (WOMAC) in 62 (34,3%) articles, Oxford Knee Score (OKS) in 51 (28,2%) and Knee Injury and Osteoarthritis Outcome Score (KOOS) in 36 (20%). The most used Performance-Based Outcomes (PBO) were Time-up and go test in 30 studies (16,6%) and the 6-minute walk test in 21 articles (11,6%). Range of motion was used in 74 studies (40,9%). Papers focused on rehabilitation programs were more prone to use PBO than to those on the surgical procedure (68,9% vs. 7%). Only 51,4% of the articles reported any adverse events that occurred to participants.





# Discussion

- The main finding of this review was that there is still a wide heterogeneity in the literature on knee replacement in reporting functional outcomes.
- Physical function is a domain that is critical for a successful arthroplasty and can be measured both with subjective and objective assessments.
- None of the measurements of the outcome included in this review has shown some superiority compared to the others. It is critical that in the following years the community will reach a consensus on measuring physical function. (6)
- There is a need for a Consensus Project to reduce heterogeneity in reporting of Physical Function in Arthroplasty.



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(Group and Background)

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