Voorstel format verricht en lopend onderzoek

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Prehabilitation Improves Knee Functioning Before and Within the First Year After Total Knee Arthroplasty: A Systematic Review With Meta-analysis

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**OBJECTIVE:** To assess whether prehabilitation influenced knee functioning before and within the first year after total knee arthroplasty (TKA) surgery.

**DESIGN:** Intervention systematic review with meta-analysis.

**LITERATURE SEARCH:** The authors searched the MEDLINE/PubMED, EMBASE, CINAHL, Cochrane

Library, Physiotherapy Evidence Database, Web of Science, and Scopus databases from their inception until March 2022.

**STUDY SELECTION CITERIA:** The authors included peer-reviewed articles comparing preoperative, short-, mid- or long-term effects of exercise-based physical therapy before primary unilateral TKA with TKA without prehabilitation.

**DATA SYNTHESIS:** We assessed bias using the Cochrane Risk-of-Bias tool (ROB 2.0) and therapeutic validity using the i-CONTENT tool. Standardized mean differences (Hedges’ *g*) and 95% confidence intervals (CIs) were calculated for knee functioning. Certainty of evidence was assessed using the Grading of Recommendations Assessment, Development,

and Evaluation (GRADE) approach.

**RESULTS:** Sixteen trials (968 participants) were included; 14 qualified for meta-analysis. Low to very low certainty of evidence favored prehabilitation over no intervention for improving knee functioning before (*g* = 1.23; 95% CI: 0.49, 1.97) and up to 3 months after TKA (short-term: 1 day to 1 month, *g* = 0.90; 95% CI: 0.18, 1.61; mid-term: 6 weeks to 3 months, *g* =

0.45; 95% CI: 0.06, 0.84). There were no significant between-group differences at long-term follow-up (6-12 months, *g* = 0.07; 95% CI: −0.17, 0.30).

**CONCLUSION:** There was low to very low certainty of evidence that prehabilitation promotes superior knee functioning before and up to 3 months after TKA, compared to TKA alone. The long-term postoperative effects were inconclusive.

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**KEY WORDS:** *exercise therapy, knee joint, physical therapy, preoperative exercise, systematic review/meta-analysis, total knee arthroplasty*



Lopend onderzoek:

Aanleveren:

onderzoeksteam

Titel van het onderzoek

Achtergrond, Doel en Vraagstelling

Methode: Design, populatie, beoogd aantal deelnemers, beoogde looptijd,

primaire uitkomstmaat en meetinstrumenten.

Bij interventieonderzoek contrast tussen interventie en controle.

Indien van toepassing beoogd effect/power.

Pdf van protocol of link naar register waarin protocol is terug te vinden.

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**Title**: Preoperative prediction of postoperative physical function three months after surgery in patiiets with total knee arthroplasty.based on preoperative physical fitness and patient characetistics.

**Design**: A retrospective cohort study.

Population: Patients were eligible to participate if they were awaiting elective primary TKA between 2022-2024 at Zuyderland Medical Center, Sittard-Geleen. Inclusion criteria were; aged between 40-90 years, BMI between 18.5-50.0 kg/m2 and American Society of Anesthesiologists (ASA) Class of I-III. Patients with rheuma-/trauma indicated knee arthroplasty were excluded.

**N**=150

**Last inclusion** augustus 2024, laatste nameting december 2024

**Outcome:** postoperative physical function, measured by the Oxford Knee Score (OKS), 3 months after TKA surgery.

**Potential predictor variables**

Age, Sex, Body mass index, ASA class (range 1–3), 30sec chair stand test, 2 minute walking test, Timed up and go test, Hand grip strength, De Morton mobility index

**Sample size**

The minimum acceptable sample size to test the overall fit of the regression model was calculated using the following formula 50 + 8 \* X, where X was the number of predictors. This resulted in the following sample size: 50 + 8 \* 9 =122. Taking into account a drop-out rate of at least 10%, 135 participants were needed.

