

A High Physical Activity Level After Total Knee Arthroplasty Does Not Increase The Risk Of Revision Surgery. A Systematic Review With Meta-Analysis And GRADE.

Orthopaedics / Knee & Lower Leg / Joint Replacement - Primary

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Background

High physical activity (HPA) levels after total knee arthroplasty (TKA) might be related to increased wear and subsequent aseptic loosening, negatively affecting TKA survival.

Objectives

This systematic review studied the association between activity levels and risk of revision surgery at medium (3-10 years) and long term (>10 years) follow-up in patients with TKA.

Study Design & Methods

This systematic review adheres to the PRISMA statement and was registered in PROSPERO (CRD42020194284). Databases (Pubmed, Embase) were searched up to 12 October 2021. Studies comparing low physical activity (LPA) and HPA levels in TKA patients and related risk of revision surgery were eligible for inclusion. After data extraction and evaluation of methodological quality, a meta-analysis was performed. Quality of evidence was assessed using the GRADE framework.

Results

Six studies met the inclusion criteria. Five were cohort studies and one a case-control study, involving 4811 TKA procedures in 4263 patients with a mean follow-up of 4 to 12 years. Five studies were of moderate methodological quality and one of low quality. Meta-analysis demonstrated no association between HPA level and an increased risk of all-cause revision surgery (risk ratio (RR) 0.62, 95% confidence interval (CI) 0.24–1.63) or revision surgery due to aseptic loosening (RR 1.33, 95% CI 0.34–5.24). The level of certainty for the prognostic factor HPA was respectively very low and moderate according to GRADE. Meta-analysis was not possible for the outcome implant survivorship. One study reported an improved survivorship for the HPA group with an odds ratio (OR) of 2.4 (95% CI 1.2–4.7, level of certainty: low).

Conclusions

HPA level after TKA is not a risk factor for medium to long term revision surgery. Patients can be encouraged to remain physically active after TKA, even at a higher level.

Level of evidence: prognostic level I.