



# The effect of Mulligan's mobilization with movement following total knee arthroplasty: Protocol of a single-blind randomized controlled trial

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## Abstract

**Background:** Mulligan's mobilization with movement (MWM) aims to enhance the kinematics of the joint. Kinematic impairment of the knee joint is significant following total knee arthroplasty (TKA), which could be managed with Mulligan's MWM. This article describes the study protocol for a single-blind randomized controlled trial investigating the effectiveness of Mulligan's MWM following TKA.

**Methods:** A single-blind randomized controlled trial design will be employed to compare two groups: an intervention and control group. Each group will attend a standard post-operative rehabilitation program. The intervention group will additionally receive articular mobilization using a Mulligan's MWM approach. A blinded examiner will assess participants at four points: pre-operation, 3 weeks post-operation (when the intervention starts), 6 weeks post-operation (when the intervention ends), and at 6 months as a long-term follow-up. The two groups will be compared on the basis of knee range of motion (standard goniometry), knee joint pain (Visual Analogue Scales), walking speed using (15-metre walk test), functional mobility (timed up and go test) and participation (Western Ontario and McMaster Universities Osteoarthritis Index questionnaire). A blinded examiner will measure knee joint alignment using a computed tomography scanogram pre-operatively and at 3 months post operation. Mixed model ANOVA will be used to identify any group differences. Ethical approval has been secured from the ethical committee of Kuwait Ministry of Health, and the trial is registered in the ISRCTN registry (ref:13028992).

**Discussion:** The study findings could inform the optimization of post-operative rehabilitation of patients following TKA.

## KEYWORDS

mobilization with movement, rehabilitation, total knee arthroplasty