

# Paper #55

## Formal Physical Therapy may not be Essential Following Unicompartmental Knee Arthroplasty: A Randomized Clinical Trial

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**Introduction:** Most surgeons and patients believe that formal physical therapy (PT) is required to achieve optimal outcomes. The purpose of this randomized clinical trial was to determine whether formal outpatient PT provided superior outcomes compared with unsupervised home exercises after unicompartmental knee arthroplasty (UKA).

**Methods:** 52 Patients who had undergone UKA at two centers were randomized to 3 sessions per week of formal PT for 6 weeks or an unsupervised home exercise program that included online access to video demonstrations and instructions of the exercises. The primary outcome was change in range of motion (ROM) at 6 weeks with secondary outcome measures including the total arc of motion, Knee Society Score (KSS), Knee Injury and Osteoarthritis Outcome Score (KOOS) Jr, Lower Extremity Functional Scale (LEFS), and Veterans Rands-12 Score (VR-12). Power analysis determined that 21 patients were required in each group to identify a 10° difference in ROM between groups with an alpha of 0.05 and beta of 0.80. The results were analyzed using a linear multivariate regression with a per-protocol analysis of the patients.

**Results:** 25 Patients received outpatient PT, 22 patients self-directed exercises, and 5 were excluded (3 crossovers from the unsupervised group into the formal PT group within the first two weeks, 1 withdrawal, and 1 lost to follow-up). Pre-operative patient characteristics were similar between treatment groups however the unsupervised group did have greater pre-operative ROM (113° vs. 120°;  $p=0.02$ ) and higher preoperative KSS (69 vs. 79;  $p=0.009$ ). There was no difference in the change of ROM between the formal PT and self-directed groups (5.0° vs. 6.6° respectively,  $p=0.43$ ) or between the total arc of motion at 6-weeks (118° vs. 127° respectively,  $p=0.17$ ). Likewise, no significant differences were found in the secondary outcomes measures prior to surgery or in the postoperative change. Importantly, two of the crossovers from the unsupervised group required a manipulation under anesthesia at 6-weeks postoperatively.

**Conclusions:** Our results suggest that a self-directed exercise program may be appropriate for most patients following UKA; however, there is a subset of patients who may benefit from formal PT to obtain optimal outcomes. Further research is needed to determine which patients can be managed with a self-directed therapy program and which patients are best served with immediate formal PT.

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