Nearly 60% of Patients Return to Sports at a Median of 10 Weeks Following Medial Unicompartmental Knee Arthroplasty: A Prospective Cohort Analysis of 1,819 Patients

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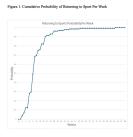
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INTRODUCTION: Medial unicompartmental knee arthroplasty (mUKA) is an effective treatment for isolated medial compartment osteoarthritis in young, active patients with high expectations regarding post-operative physical activity. Although existing studies report high return to sports (RTS) rates after mUKA, ranging from 75% to 100%, there is limited evidence on the proportion of patients returning to their pre-operative level of sport, which varies from 60% to 95%. Furthermore, the time required to RTS following mUKA ranges from 3 to 6 months, but factors affecting this timeline remain unclear. The literature also lacks a comprehensive analysis of the factors influencing the inability to RTS after mUKA, with some studies suggesting that age, sex, body mass index, and pre-operative activity level may play a role. The purpose of this study was to 1) determine the rates of RTS after mUKA, 2) evaluate the proportion of patients returning to their specific pre-operative level of sport, 3) quantify the time required to RTS, and 4) identify pre-operative and post-operative factors affecting the inability to RTS following mUKA.

METHODS: A prospective institutional cohort of 1,819 primary mUKAs performed between January 2016 and December 2022 was analyzed. Of these, 260 patients (14.3%) were athletes or participating in sports at baseline, and 224 (86.2%) completed the one-year follow-up. (Table 1) Demographics, comorbidities, baseline and one-year RTS status, time to RTS, type of athlete, and patient-reported outcome measures (PROMs), including the Knee Injury and Osteoarthritis Outcome Score (KOOS) pain, KOOS physical function short form (PS), and Joint Replacement (JR), were recorded. Descriptive statistics, Cox regression analysis for time to RTS, and logistic regression for factors associated with the inability to RTS were performed.

RESULTS: Of the 224 patients, 131 (58.5%) were able to RTS, while 93 (41.5%) were unable to RTS. Among those who returned to sports, 60.3% returned to the same sport at the same level of intensity and performance, 34.3% returned with reduced effort or performance, and 5.4% were able to return to sports overall but not to the same sport. The median time to RTS was 10 weeks, with 90% of patients restarting sports within 25 weeks. (Figure 1) Cox regression analysis revealed that patients who quit smoking for more than 6 months had a higher likelihood of RTS compared to those who never smoked (HR: 1.65, 95% CI: 1.06-2.58). (Table 2) Logistic regression analysis showed that female patients had lower odds of RTS compared to male patients (OR: 0.40, 95% CI: 0.19-0.82), and recreational athletes had higher odds of RTS compared to non-recreational, non-competitive athletes (OR: 0.02, 95% CI: 0.00-0.09). (Table 3) DISCUSSION AND CONCLUSION:

A majority of the patients who participated in sports before mUKA successfully returned to sports within one year of surgery, with a median time to return of 10 weeks. Most patients returned to their pre-operative sport at the same level of intensity and performance. However, RTS rates varied based on sex, smoking status, and pre-operative competitive level. These findings can guide patient expectations and inform shared decision-making when discussing RTS after mUKA. Surgeons should consider these factors when counseling patients on their post-operative goals and potential barriers to RTS. Future research should focus on developing targeted interventions to improve RTS rates, particularly among female patients and recreational athletes, and on establishing standardized RTS criteria to facilitate comparisons across studies.



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