

# Physical Activity and Primary Knee Replacement following Knee Osteoarthritis: An Analysis from the Osteoarthritis Initiative

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**INTRODUCTION:** Osteoarthritis (OA) is a prevalent chronic degenerative disease causing pain, joint stiffness, and disability in older adults. Given the established benefits of physical activity for both physical and mental health, we hypothesize that higher physical activity levels will be protective and reduce the risk of primary knee replacement (KR) in OA patients.

**METHODS:**

A total of 2,534 participants derived from the Osteoarthritis Initiative (OAI) with radiographic knee OA (ROA, Kellgren and Lawrence grade  $\geq 2$ ) completed the Physical Activity Scale for the Elderly (PASE) questionnaires at baseline. Subdistribution hazard models, accounting for competing risks of death and KR unrelated to OA, were applied to the data.

**RESULTS:**

During the nine-year follow-up period, there were 372 primary KR due to OA. The cumulative incidence of KR in year 9 was 14.68% (95% confidence interval (CI): 13.36%, 16.12%). The cumulative incidence of all-cause KR and death before any KR was 20.49% (95% CI: 18.96%, 22.11%) by year 9. No association was found between physical activity and primary KR following OA using continuous PASE scores (adjusted hazard ratio: 1.01; 95% CI: 0.99-1.01). Additionally, low, moderate, or high physical activity levels were not associated with primary KR following OA.

**DISCUSSION AND CONCLUSION:**

In conclusion, our study indicates that physical activity levels were not associated with primary KR in patients with OA. This suggests that engaging in physical activity may be considered safe for patients with OA. While our findings contribute to the current understanding of the relationship between physical activity and KR risk in OA patients, inconsistencies among studies highlight the need for further investigation.

