

Preoperative Weight Loss Before Total Knee Arthroplasty Does Not Improve Postoperative Risks

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INTRODUCTION:

Many surgeons recommend weight loss for patients with obesity before total knee arthroplasty (TKA). However, surgeons and patients frequently ask how much weight loss is clinically significant? The goals of this study were to determine how many patients lose weight before TKA, predictors of preoperative weight loss, and if preoperative weight loss improves outcomes.

METHODS: Among 23,726 primary TKAs performed between 2002 and 2019, we identified 3665 patients with preoperative body mass indices (BMIs) $>30 \text{ kg/m}^2$ measured 1-24 months before surgery and a weight measured at surgery. The mean age was 68 years with 59% female. The mean BMI was 36 kg/m^2 . Univariable logistic and linear regressions and Cox proportional hazard models evaluated length of stay, discharge disposition, operative time, complications, revisions, and reoperations among patients maintaining preoperative weight compared to those losing ≥ 10 pounds before surgery. Mean follow-up was 5 years.

RESULTS: Overall, 41% lost ≥ 5 pounds, 24% lost ≥ 10 pounds, and 9% lost ≥ 20 pounds before TKA. The odds of losing ≥ 10 pounds were not significantly associated with age (OR=1 per 10 years younger; $p=0.97$) or male sex (OR=0.95; $p=0.53$). When comparing those who lost ≥ 5 pounds, ≥ 10 pounds, or ≥ 20 pounds to those who maintained preoperative weight, there were no differences in 1-year, 2-year, 5-year, or 10-year survivorship free of infection, complication, revision, or reoperation. Across the entire follow-up period, losing ≥ 10 pounds was not associated with significant differences in operative time, length of stay, discharge disposition, operative time, complications, revisions, or reoperations.

DISCUSSION AND CONCLUSION: Relatively few patients lost meaningful weight before TKA, suggesting that current practices promoting preoperative weight loss are not effective. Even those achieving common patient benchmarks for weight loss did not improve overall outcomes. While weight loss benefits overall health, preoperative weight loss alone may not be sufficient to reduce postoperative TKA risks.