**Obesity Does Not Tip the Scale with Regards to Failure of Unicompartmental Knee Arthroplasty at 5-Years**

**INTRODUCTION:** The Scott and Kozinn criteria for unicompartmental knee arthroplasty (UKA) traditionally exclude obese patients due to concerns for implant loosening. However, more recent studies have questioned these restrictions and demonstrated acceptable outcomes with expanded indications. This study aimed to evaluate whether obesity should remain a contraindication to UKA.

**METHODS:** A large, national database was used to identify patients undergoing UKA from 2010–2023. Patients were stratified into BMI tiers (30–40, 40–50, 50–60, ≥60) and matched to patients with BMI <30 based on age, sex, Elixhauser Comorbidity Index, diabetes, and smoking status. The final cohort included 18,726 patients. The primary outcome was 5-year revision rates. Secondary outcomes included 90-day medical and 2-year surgical complications. Chi-square and t-tests were used for comparisons between each BMI tier with the matched control cohort

**RESULTS:** Five-year revision rates did not differ significantly across BMI tiers compared to matched controls (all $p > 0.05$). Patients with BMI 30–40 and 40–50 had higher odds of acute kidney injury (OR 1.5 and 1.9, respectively), while the BMI 30–40 cohort had lower transfusion rates (OR 0.5). No other 90-day complications differed significantly. At 2 years, patients with BMI 40–50 had higher rates of manipulation under anesthesia, and those with BMI ≥60 had increased periprosthetic joint infection (OR 3.2). Rates of aseptic loosening, periprosthetic fracture, mechanical failure, instability, and revision were not significantly different.

**CONCLUSION:** Obesity was not associated with increased 5-year revision following UKA. While higher BMI was linked to select perioperative risks, implant survivorship remained unaffected. These findings suggest BMI influences short-term outcomes more than long-term failure and support perioperative optimization rather than strict BMI-based exclusion.

**Table 1. Univariate analysis of 5-year revision rate by BMI**

| BMI group | N (matched control) | N (BMI group) | 5-year revision (matched control) | 5-year revision (BMI group) | P-value |
|---|---|---|---|---|---|
| **30-40** | 11,641 | 11,641 | 601 (5.16%) | 629 (5.40%) | 0.4289 |
| **40-50** | 5,807 | 5,807 | 365 (6.29%) | 369 (6.35%) | 0.9089 |
| **50-60** | 1,009 | 1,009 | 66 (6.54%) | 81 (8.03%) | 0.2304 |
| **>60** | 520 | 269 | 33 (6.35%) | 21 (7.81%) | 0.5343 |

**Table 2. Multivariate analysis of 5-year revision rate in matched cohorts undergoing UKA in comparison to BMI <30**

| BMI group | Odds ratio, OR (95% confidence interval, CI) | P-value |
|---|---|---|
| **30-40** | 1.09 (0.96-1.23) | 0.165 |
| **40-50** | 1.04 (0.89–1.21) | 0.602 |
| **50-60** | 1.27 (0.90–1.79) | 0.169 |
| **>60** | 1.22 (0.68–2.15) | 0.486 |