## **Total Knee Arthroplasty After Prior Amputation**

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INTRODUCTION:

Limb loss prevalence in the US is projected to double to 3.6 million people by 2050 due to the diabetes epidemic. Amputations change gait mechanics and may exacerbate osteoarthritis or affect outcomes after total knee arthroplasty (TKA). This study evaluated clinical, patient-reported, and radiologic outcomes after TKA in patients with prior lower extremity amputations.

## METHODS:

Among 63,795 primary TKAs performed between 1990 and 2021, we identified 26 TKAs (0.04%) with prior transtibial (21, 81%) or transfemoral (5, 19%) amputations and minimum 2-year follow-up. Most amputations were contralateral (24, 92%). Indications for amputation included trauma (10, 38%), osteomyelitis (5, 19%), tumor (5, 19%), vascular (3, 12%), and septic nonunions of ankle arthrodeses (3, 12%). Mean time from amputation to TKA was 17 years. The mean age at TKA was 66 years, 77% were male, and mean BMI was 34 kg/m<sup>2</sup>. Complications, revisions, reoperations, Knee Society Scores (KSS), and radiographic loosening were evaluated. Mean clinical and radiographic follow-up after TKA was 8 and 4 years, respectively.

RESULTS: Nine patients (35%) had at least one postoperative complication including acute blood loss anemia, acute kidney injury, aseptic loosening, dislocation, arthrofibrosis, surgical site infection, and abscess. Three patients (12%) had revisions including two patellar component revisions and one full component revision for aseptic loosening. Six patients (23%) had reoperations including three revisions, one manipulation under anesthesia, one mesh repair for a quadriceps tendon rupture, and one irrigation and debridement. Mean KSS increased from 43 preoperatively to 86 at the first postoperative measurement (p<0.05) and 87 at final follow-up (p<0.05). Radiographic loosening was observed in 2 TKAs (8%).

## DISCUSSION AND CONCLUSION:

Patients with lower extremity amputations experience clinically significant improvements after TKA. However, patients and surgeons must weigh these benefits against relatively high postoperative risks and consider aggressive preoperative optimization of comorbidities.