



## Alarming National Obesity Trends in Revision Total Knee Arthroplasty

**Susan M. Odum, PhD**, Bryce A. Van Doren, MPH, MPA,  
Joshua L. Carter, MD, Bryan D. Springer, MD

**Introduction:** The utilization of primary TKA in obese patients has increased significantly over the past decade despite overwhelming data that suggests higher failure rates. As such, it is reasonable to expect a parallel increase in obesity rates among revision total TKA (rTKA) patients. The purpose of this study was to analyze longitudinal trends in obesity rates among rTKA patients.

**Methods:** We identified 451,982 rTKA patients using 2002-2012 Nationwide Inpatient Sample discharge data. The obesity comorbidity indicator was to identify 70,470 obese patients (BMI > 30) and 335,257 non-obese patients. We evaluated trends in obesity rates over time using chi-square tests and a multivariate logistic regression model. Several covariates were included in the analysis, patient demographics (age, gender, and race), payer type, hospital type and patient health status.

**Results:** The obesity rate among rTKA patients increased significantly from 9.74% in 2002 to 24.57% in 2012 ( $p < 0.0001$ ). After adjusting for all factors, patients treated in 2011 (OR: 4.1 [3.7-4.6],  $p < 0.0001$ ) or 2012 (OR: 4.5 [4.0-5.0],  $p < 0.0001$ ) were over four times as likely to be obese, compared to patients treated in 2002. Other independent factors that were significantly associated with higher obesity rates include female patients (OR 1.5 95% CI 1.5-1.6) and patients between the ages of 45 and 64 years (OR 3.2, 95% CI 3.1-3.3).

**Conclusions:** The more than four-fold increase in the obesity rate among patients undergoing rTKA, particularly the young age group, over the past decade is an alarming trend. Improved clinical care pathways are needed to manage the obese total knee patient.