BMI Does Not Increase or Decrease 10 Years after Primary Total Hip or Total Knee Arthroplasty

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INTRODUCTION: Although patients often aim to lose weight after total hip arthroplasty (THA) or total knee arthroplasty (TKA), postoperative changes in body mass indices (BMIs) remain controversial. We analyzed BMI at 2, 5, and 10 years after primary THA and TKA, and determined predictors of BMI change.

METHODS: Through our total joint registry, we identified patients who underwent primary THA or TKA between 2001 and 2011 and had a BMI measurement at surgery, as well as at 2, 5 and 10 years postoperatively. This resulted in 896 patients (368 hips, 528 knees). The mean age was 66 years and 59% were female. BMI changes were analyzed with repeated measures ANOVA. Multinomial logistic regression was used to determine predictors of BMI change.

RESULTS: Following THA, the mean BMI increased from 30.1 kg/m^2 at surgery to 30.7 kg/m^2 at 2 years ($p=0.001$) and 30.6 kg/m^2 at 5 years ($p=0.003$). Following TKA, BMI increased from 32.5 kg/m^2 at surgery to 33 kg/m^2 at 2 years ($p=0.005$) and 33 kg/m^2 at 5 years ($p=0.002$). By 10 years, the BMIs of hip (30.4 kg/m^2) and knee (32.5 kg/m^2) patients were similar to BMIs at surgery ($p=0.37$ and $p>0.99$, respectively). Higher BMI at surgery (OR 1.04, $p=0.003$) was associated with at least a 5% BMI loss at 10 years, and female sex (OR 1.67, $p=0.002$) with at least a 5% gain. Older age at surgery was associated with an increased odds of BMI loss of at least 5% at 10 years (OR 1.03, $p=0.003$).

DISCUSSION AND CONCLUSION: While female sex, older age, and higher BMI at index arthroplasty were associated with a 5% change in BMI at 10 years, on average BMI did not meaningfully change 2, 5, or 10 years after THA and TKA. Arthroplasty should not be viewed as a gateway to meaningful improvements in BMI.