

# The Impact of Weight Loss Timing on Postoperative Outcomes in Total Hip Arthroplasty

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**INTRODUCTION:** The study aimed to investigate the influence of preoperative weight loss timing on outcomes of total hip arthroplasty (THA) in patients who have elevated body mass index (BMI), focusing on surgical site infections (SSI) and deep prosthetic joint infection (PJI).

**METHODS:** A national database was queried to analyze over 120 million health records of patients undergoing THA between 2010 and 2020. Two cohorts were defined: patients who have a BMI from 45 to 50 (BMI 45-50 group) and patients who have a BMI from 40 to 45 (BMI 40 to 45 group), both of which achieved weight loss to a BMI below 30. The control group comprised non-obese patients with a BMI between 20 and 30. Weight loss timing was tracked and patients were followed up to two years postoperatively for PJI and SSI.

**RESULTS:** In comparison to the control group, patients in the BMI 45 to 50 group who achieved weight loss, three, six, and nine months preoperatively showed significantly higher odds of PJI and SSI at 90 days ( $P < 0.001$ ), with odds ratios from 2.15 to 5.22. Weight loss achieved a year prior showed no significant difference in PJI risk at 90 days, 1- and 2-years ( $P < 0.752$ ) when compared to non-obese patients. In the BMI 40 to 45 group, patients who achieved weight loss three and six months pre-surgery had higher PJI and SSI rates at 90 days, 1- and 2-years ( $P < 0.001$ ).

## DISCUSSION AND CONCLUSION:

The timing of weight loss affected postoperative complications following THA. Early weight loss, a year prior to surgery, lowers the risk of SSI and PJI, while weight loss closer to the surgery increases these risks. This necessitates further exploration into optimal weight loss strategies for patients considering THA.

