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## **Study shows weight loss prior to knee surgery improved outcomes for morbidly-obese patients**

**LAS VEGAS** (March 12, 2019)—Morbidly obese patients who lost at least 20 pounds prior to total knee arthroplasty (TKA) had shorter hospital stays and lower odds of having to go to a nursing facility even if they remained morbidly or severely obese, according to a study presented at the 2019 Annual Meeting of the [American Academy of Orthopaedic Surgeons](#) (AAOS).

Each year, over 600,000 knee replacement surgeries are performed in the United States.<sup>i</sup> The number of morbidly obese people undergoing TKA has risen steadily.<sup>ii</sup> Due to concerns about complications stemming from obesity, many surgeons require morbidly obese patients—those with a body mass index (BMI) of 40 or greater—to lose weight before the operation.

“There isn’t a standard practice for how much weight needs to be lost prior to surgery, nor is there a standard definition for clinically significant weight loss,” said Benjamin Keeney, PhD, instructor in orthopaedics, Dartmouth Geisel School of Medicine. “With this paper, we tried to find the justification for losing five, 10 or 20 pounds. It’s hard to find where it explicitly states this is the amount of weight you need to lose for meaningful change, especially in the context of total knee arthroplasty.”

In the study, [“How Much Preoperative Weight Do Morbidly Obese Patients Undergoing Total Knee Arthroplasty Need to Lose to Meaningfully Improve Outcomes,”](#) Dr. Keeney and his colleagues wanted to determine how much weight loss was necessary to improve operative time, length of stay, discharge to a rehabilitation facility and physical function improvement. The researchers retrospectively reviewed prospective data from 2011-2016, identifying 203 patients who were morbidly obese at least 90 days prior to surgery. The patients lost at least five, 10 or 20 pounds before undergoing TKA. After the weight loss, 27 patients were no longer considered morbidly obese and 23 were considered severely obese (35-40 BMI).

Patients with morbid obesity who lost 20 pounds before TKA had lower odds of being discharged to a nursing facility, lower odds of an extended length of stay of at least four days and an absolute shorter length of stay compared to patients who did not lose 20 pounds. The researchers found no difference in operative time or physical function improvement. Even if the patients remained morbidly or severely obese, benefits were still seen.

“While we don’t have a full understanding of the minimal weight loss necessary to improve outcome from a physiologic standpoint, our study supports even small increments of weight loss in patients undergoing knee replacement,” said David S. Jevsevar, MD, MBA, senior author and Chair of Orthopaedics at Dartmouth-Hitchcock Medical Center and the Geisel School of Medicine. “Our work may also reflect weight loss as being a surrogate for patient activation and engagement, which have been shown to have significant impact on outcomes in this patient population.”

“Because length of stay and facility discharge are primary drivers of cost, quality of life, and satisfaction, this has immense implications,” said Dr. Keeney. “If you lose at least 20 pounds before surgery, your outcomes are going to be much better, even if you are still a physically large patient at the time of

surgery. This is a concrete goal instead of telling patients we won't operate on you unless you get below a BMI of 40, which for some patients, can be 50 or 100 pounds."

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## [2019 AAOS Annual Meeting Disclosure Statement](#)

### **About the AAOS**

With more than 39,000 members, the [American Academy of Orthopaedic Surgeons](#) is the world's largest medical association of musculoskeletal specialists. The AAOS is the trusted leader in advancing musculoskeletal health. It provides the highest quality, most comprehensive education to help orthopaedic surgeons and allied health professionals at every career level best treat patients in their daily practices. The AAOS is the source for information on bone and joint conditions, treatments and related musculoskeletal health care issues and it leads the health care discussion on advancing quality.

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<sup>i</sup> American Academy of Orthopaedic Surgeons. Total Knee Replacement.

<https://orthoinfo.aaos.org/en/treatment/total-knee-replacement/>. Accessed 1/31/19.

<sup>ii</sup> The obesity epidemic: its effect on total joint arthroplasty. Fehring TK, Odum SM, Griffin WL, Mason JB, McCoy TH. J Arthroplasty. 2007;22:71–76.