

Study overturns common assumption about knee replacements in morbidly obese individuals

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After total knee replacement (TKR) surgery, patients who are morbidly obese have similar pain and function outcomes as patients who do not fall into this weight category, according to a new study by researchers at Hospital for Special Surgery. The finding is surprising given that numerous studies have shown that obese patients have worse outcomes. The study will be reported at the annual meeting of the American College of Rheumatology/Association of Rheumatology Health Professionals, to be held Nov. 9-14, in Washington D.C.

"As long as they are medically appropriate for [surgery](#), even obese people can have excellent results from joint replacement. Obesity, in and of itself, should not be viewed as an absolute contraindication to joint replacement," said Lisa Mandl, M.D., M.P.H., a rheumatologist at Hospital for Special Surgery (HSS), in New York City, who was involved with the study.

"We undertook the study because we are in the midst of an [obesity epidemic](#)," said Susan Goodman, M.D., a rheumatologist at HSS, who led the study. Until now, many studies examining TKRs in [obese patients](#) have lumped all [patients](#) with a [body mass index](#) (BMI) of 30 and higher into one category. "In my mind, there is clearly a difference in a patient with a BMI of 40, the morbidly obese, versus an obese patient with a BMI of 33," said Dr. Goodman. "We wanted to see if we could identify a difference in outcomes among those patients, and we found that the

morbidly obese had just as good outcomes."

[Overweight individuals](#) are prone to developing [osteoarthritis](#) because the extra weight adds extra wear and tear on joints. An obese individual often requires a TKR decades before a patient who is of normal weight will require one.

To conduct their research, the HSS researchers turned to the HSS Total [Joint Replacement](#) Registry, a prospective registry started in 2007 that includes, among other things, data on all patients who seek care at HSS for [knee replacement surgery](#). They identified all patients with a BMI greater than 18.5 who had undergone a TKR between July 2007 and June 2009. Patient pain and function had been assessed prior to surgery and two years after surgery using the Western Ontario and McMaster Universities Arthritis Index (WOMAC). The WOMAC measures pain, stiffness, and functional limitation. It is one of the more widely used tools for measuring outcomes after TKR.

The investigators found that two years after surgery, pain and function scores improved across all BMI categories and as BMI rose, patient improvements increased. Patients with a BMI greater than 40 showed the most improvement.

"The morbidly obese did well in terms of their pain and function outcomes. They start out in a much worse situation and then by two years, they are pretty much caught up," said Dr. Goodman. "I was surprised, because my expectation was that they wouldn't do as well, their functional outcomes wouldn't be as good, and they wouldn't be as satisfied. But, it turns out that they were really quite satisfied."

Dr. Goodman said that many surgeons have concerns about performing knee replacements in the morbidly obese. Almost 90% of referring physicians believe that obesity increases the likelihood of poor outcomes

after a TKR.

"There is no question that the morbidly obese are a more difficult group to manage—they are more likely to have a significant number of comorbidities, including cardiac disease," said Dr. Goodman. "If you look at the Deyo comorbidity scale of the patients in our study, the [morbidly obese](#) had a significantly greater number of comorbidities than normal, so they were definitely sicker to start with, but their outcomes were just as good."

In a multivariate analysis, the researchers identified a number of other factors that correlated with pain outcomes after surgery. They found that individuals who were Caucasian experienced less pain, and individuals who were female or had only a high school education had worse pain and function two years after surgery. Patients who were between the ages of 61 to 70 had less [pain](#) than those who were younger than 60. The researchers say that more research is needed to flush out why these factors play a role in recovery.

"It's surprising to learn that a patient's level of education has a greater influence on their outcome and satisfaction than obesity does," said Mark Figgie, M.D., an orthopedic surgeon and Chief of the Surgical Arthritis Service at HSS.

Provided by Hospital for Special Surgery

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