

# Morbidly obese patients may benefit from bariatric surgery prior to knee replacement

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Previous research studies have linked obesity to adverse outcomes and increased costs following total knee replacement surgery (TKR). A [new, computer model-based evaluation](#) appearing in the *Journal of Bone and Joint Surgery*, supports bariatric surgery in morbidly obese patients with end-stage osteoarthritis (loss of cartilage and joint pain, caused by aging and use) prior to TKR.

Approximately 30 percent of Americans are obese (a [body mass index](#) (BMI)  $\geq 30$  kg/m<sup>2</sup>) and obesity is a known risk factor for osteoarthritis. While TKR is a typical treatment for end-stage osteoarthritis, obesity places patients at an increased risk for complications, including delayed wound healing, infection, the need for revision [surgery](#), and lower functional outcomes.

In the evaluation, researchers used a computer model to analyze previously published data on obesity, bariatric surgery and TKR. The evaluation compared the costs and outcomes of two treatment options for patients with morbid obesity (a BMI  $\geq 35$  kg/m<sup>2</sup>) and end-stage knee osteoarthritis: The first, TKR without prior weight loss; and the second, TKR two years after bariatric surgery.

"We know that bariatric surgery can be an effective treatment for morbid obesity, reducing a patient's excess weight. In addition, the surgery also reduces the burden of co-morbidities, like diabetes and high blood pressure, and may extend a patient's life span," said orthopaedic surgeon and lead article author Alexander McLawhorn, MD, MBA. "What we didn't know was whether or not it is cost effective to recommend bariatric surgery to achieve weight loss and improve preoperative health prior to joint replacement."

The model predicts that patients with [morbid obesity](#) who undergo bariatric surgery two years prior to TKR are more likely to enjoy improved quality-of-life, measured in quality-adjusted life

years (QALYs), than patients undergoing TKR without prior [weight loss surgery](#). In addition, the cost necessary for this level of improvement was \$13,910 per QALY, which is below the amount society and health care payers, like insurers and the government, are typically willing to pay.

"We found that successful bariatric surgery performed two years before TKR could be a cost-effective treatment strategy for morbidly obese patients with end-stage arthritis," said Dr. McLawhorn. "While there remains some uncertainty in terms of the precise effects of bariatric surgery on knee osteoarthritis and total knee replacement, our model summarizes what is known about the clinical effects and costs of obesity, [bariatric surgery](#) and [total knee replacement](#)."

"The results of this study may help surgeons in counseling morbidly obese patients with knee osteoarthritis, and trying to come up with an individualized treatment plan that includes optimization of overall health, nutrition and weight prior to knee replacement," said Dr. McLawhorn.

Provided by American Academy of Orthopaedic Surgeons

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