Arthritis Today
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Knee Replacement Patients More Likely to Gain Weight After Surgery

"Clinically important weight gain" does not appear to affect new joints but can lead to other health issues.

By Barbara Bronson Gray



12/27/12 Almost a third of people who undergo total knee replacement (TKR) surgery gain 5 percent or more of their starting bodyweight within five years of the procedure, according to a new study published recently online in *Arthritis Care & Research*. The finding goes against the "logical assumption" that patients would be more likely to lose weight after TKR surgery because the reduced pain and increased mobility afforded by the surgery would lead to increased activity and exercise, according to the study authors.

Previous studies that have examined the issue have reached conflicting conclusions – possibly because of different study designs and follow-up times. This is the first time a study has looked at longer-term (five-year) weight changes, and compared patients who've had surgery to a control group, in order to account for weight gain attributable to normal aging.

"While the increased weight doesn't appear to influence the outcome of knee surgery, it does raise the risk of other health problems, such as diabetes and heart disease," says lead study author Daniel Riddle, PhD, professor of physical therapy and orthopaedic surgery at Virginia Commonwealth University, in Richmond.

A 5 percent weight gain translates to 7.5 pounds for a 150-pound person, and 10 pounds for a 200-pound person. That may not seem like a lot, but the authors deem it to be "clinically important," because multiple studies have shown that it can lead to "meaningful effects on cardiovascular and diabetes-related risk as well as pain and function."

For the study, Riddle and his team analyzed data from a large patient registry that included more than 900 people who underwent total knee replacements at the Mayo Clinic, in Rochester, Minn., between 1995 and 2005. The registry collected information at the time of surgery and then two

and five years post-surgery. The researchers compared the information to a sample of people from the same geographic area who did not have the surgery. The researchers made sure that age, gender, weight, education, other diseases and conditions and any pre-surgical weight change were noted so these factors would not interfere with the study results.

The researchers found that 30 percent of those who had total knee replacement gained 5 percent or more of their pre-surgery weight five years after surgery, as compared to about 20 percent of the people who had not had the surgery. People who were younger than 70, those who had lost a substantial amount of weight before surgery and those who underwent a second joint replacement procedure were at particularly high risk for gaining weight after surgery.

Riddle has long been interested in identifying issues that might affect recovery or could increase the chances someone would need surgery in another joint. The incidence of needing a second knee surgery or another joint replacement – in the other knee or in a hip, for example – is between 30 and 60 percent, he says. He wondered whether post-procedure weight gain could be a factor.

"If we can keep this weight off these patients we might be able to decrease the risk of future arthroplasty [joint replacement]," Riddle explains. "Good bio-mechanics data show the loads on joints are magnified with every pound of weight gain. Weight and obesity are substantial risk factors for the onset and progression of osteoarthritis."

Why do so many people gain weight after knee replacement? Riddle said he could only speculate. "It seems, based on the data, that a proportion of people don't get very active [after knee replacement]," Riddle says.

H. John Cooper, MD, an orthopaedic surgeon at Lenox Hill Hospital in New York, says he found the results a bit surprising. "Total knee replacement does an excellent job of restoring function and relieving pain," he says. "After surgery people almost always are able to get back to exercise if they want to."

Dr. Cooper notes, however, that the key indicator of successful knee replacement surgery is the relief of pain, not the full resumption of activity.

Dr. Cooper says, in light of this research, surgeons should talk with patients about the potential to gain weight over time. "I see my patients annually after surgery; it's an opportunity for us to discuss this issue," he says.