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Gastric Bypass Surgery Helps Diabetes but Doesn't Cure It, Study Suggests

ScienceDaily (Nov. 26, 2012) — After gastric bypass surgery, diabetes goes away for some people -- often even before they lose much weight. So does that mean gastric surgery "cures" diabetes? Not necessarily, according to the largest community-based study of long-term diabetes outcomes after bariatric surgery. For most people in the study, e-published in advance of print in *Obesity Surgery,* diabetes either never remitted after gastric surgery or relapsed within five years.

Among the two thirds of the study's patients whose diabetes at first went away, more than a third re-developed diabetes again within five years after gastric surgery. After adding in the one quarter of patients whose diabetes never remitted after surgery, most (56 percent) of the study's patients had no long-lasting remission of their diabetes following gastric surgery. However, when diabetes did go away, the research team extrapolated, it stayed away for a median of eight years.

Which kinds of obese people with type 2 diabetes are likely to get the most benefit from gastric surgery? "Our results suggest that, after gastric surgery, diabetes stays away for longer in those people whose diabetes was less severe and at an earlier stage at the time of surgery," said principal investigator David E. Arterburn, MD, MPH, a general internist and associate investigator at Group Health Research Institute. "Gastric surgery isn't for everyone," he said. "But this evidence suggests that, once you have diabetes and are severely obese, you should strongly consider it, even though it doesn't seem to be a cure for most patients."

The multi-site study tracked 4,434 adults at Kaiser Permanente Northern California, Kaiser Permanente Southern California, and HealthPartners for 14 years: from 1995 to 2008. The research arms of all three of these integrated health care delivery systems -- and Group Health Research Institute, where the study's results were analyzed -- belong to the HMO Research Network. The patients had type 2 diabetes that was either controlled with medication or else uncontrolled, and they were also obese enough to be candidates for gastric bypass surgery.

"Diabetes is an increasingly common disease that tends to keep getting worse relentlessly," Dr. Arterburn said. More than 25 million American adults have diabetes -- and as populations age and keep gaining weight, 50 million are predicted to have it by 2050. Already, diabetes accounts for 5 percent of all U.S. health care spending. And it raises the risk of blindness, kidney disease, heart attacks, strokes, and deaths.

"Prevention is by far the best medicine for diabetes," Dr. Arterburn said. "Once you have diabetes, it's really hard to get rid of. Attempts to treat it with intensive lifestyle changes and medical management have been disappointing." For instance, the National Institutes of Health recently halted the Look AHEAD study of intensive lifestyle changes for people with diabetes. Despite improvements in risk

factors like body weight, fitness, and blood pressure, sugar, and lipids, that study showed lifestyle changes did *not* lower the outcomes that matter most: heart attacks, strokes, and deaths.

"No wonder so many were excited to learn that diabetes can remit after gastric surgery -- even, in some cases, before any significant weight loss -- and many were hoping that gastric surgery might be a 'cure' for diabetes," Dr. Arterburn said. "Our study is the first major evidence that diabetes often recurs after gastric bypass surgery." Still, he added, even after diabetes comes back, having had a long period of post-surgery remission is likely to have many positive effects, such as fewer complications of diabetes: less damage to eyes and kidneys, and fewer heart attacks, strokes, and deaths. The researchers are now funded by the National Institutes of Health to study that possibility in this same population. Dr. Arterburn is also leading a randomized controlled pilot trial of intensive behavioral treatment vs. gastric surgery at Group Health with colleagues from the University of Washington.

It's still not clear whether diabetes relapse happens because of gaining weight back or because of underlying the progression of diabetes. But patients' weight -- before and after surgery -- was not strongly correlated with remission or relapse of diabetes in this population.

As part of the Developing Evidence to Inform Decisions about Effectiveness (DEcIDE) program, the Agency for Healthcare Research and Quality (AHRQ) of the U.S. Department of Health and Human Services funded this project under contract HHSA290-2005-0033-I-TO10-WA1, led by Dr. Arterburn.

McCulloch, Joe Selby. **A Multisite Study of Long-term Remission and Relapse of Type 2 Diabetes Mellitus Following Gastric Bypass**. *Obesity Surgery*, 2012; DOI: 10.1007/s11695-012-0802-1

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Group Health Research Institute (2012, November 26). Gastric bypass surgery helps diabetes but doesn't cure it, study suggests. *ScienceDaily*. Retrieved November 27, 2012, from http://www.sciencedaily.com/releases/2012/11/121126142957.htm

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