UT SOUTHWESTERN MEDICAL CENTER NEWS

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Diet shown to be critical factor in improving type 2 diabetes after bariatric surgery, UT Southwestern researchers report

DALLAS – April 2, 2013 – Patients with type 2 diabetes who consume a diet identical to the strict regimen followed after bariatric surgery are just as likely to see a reduction in blood glucose levels as those who undergo surgery, researchers at UT Southwestern Medical Center have found.

"For years, the question has been whether it is the bariatric surgery or a change in diet that causes the diabetes to improve so rapidly after surgery," said Dr. Ildiko Lingvay, assistant professor of internal medicine and first author of the study published online in *Diabetes Care*. "We found that the reduction of patients' caloric intake following bariatric surgery is what leads to the major improvements in diabetes, not the surgery itself."

The study followed 10 patients in a controlled, inpatient setting during two distinct periods. Initially they were treated only with the standard diet given to patients after bariatric surgery, while researchers measured effects on blood glucose levels. Several months later, the patients underwent the Roux-en-Y gastric bypass bariatric surgery and followed the same diet while the UT Southwestern research team again examined blood glucose levels. Patients received less than 2,000 calories total during each of these 10-day periods, which is the customary diet after gastric bypass surgery.

Fasting blood glucose levels dropped 21 percent on average during the diet-only phase, and 12 percent after combining the diet with surgery. Patients' overall blood glucose levels after a standard meal decreased by 15 percent in the diet-only phase and 18 percent after combining diet with surgery. The scientists said the results demonstrate that the extremely restrictive diet imposed after bariatric surgery is responsible for the rapid diabetes remission, which occurs within days of the procedure normally.

"Unfortunately, such a restrictive diet is nearly impossible to adhere to long-term in the absence of bariatric surgery," Dr. Lingvay said. "We found that the success of bariatric surgery is mediated through its ability to control food intake, which in turn has a beneficial effect on diabetes."

Type 2 diabetes often develops as a result of obesity and occurs because the body cannot

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meet the high demand of insulin imposed by obesity and insulin resistance. The American Diabetes Association estimates that more than 20 million people in the U.S. have type 2 diabetes. If left untreated, the diabetes can lead to other conditions such heart disease and stroke, as well as nerve and kidney damage.

The study was performed with support from the National Institutes of Health.

Dr. Eve Guth, assistant professor of internal medicine, also was involved in the study, as were Dr. Edward Livingston, former professor of surgery who is now at *The Journal of the American Medical Association*, and Dr. Arsalla Islam, former assistant professor of surgery who is now at Wake Forest University. Dr. Livingston served as senior author of the investigation.

Visit http://www.utswmedicine.org/conditions-specialties/weight-loss-obesity/ to learn more about weight loss and obesity clinical services at UT Southwestern.

About UT Southwestern Medical Center

UT Southwestern, one of the premier academic medical centers in the nation, integrates pioneering biomedical research with exceptional clinical care and education. The institution's faculty includes many distinguished members, including five who have been awarded Nobel Prizes since 1985. Numbering more than 2,700, the faculty is responsible for groundbreaking medical advances and is committed to translating science-driven research quickly to new clinical treatments. UT Southwestern physicians provide medical care in 40 specialties to nearly 100,000 hospitalized patients and oversee more than 2.1 million outpatient visits a year.

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