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**NEW STUDY IDENTIFIES PATIENTS MOST LIKELY TO ACHIEVE REMISSION  
OF TYPE 2 DIABETES AFTER BARIATRIC SURGERY  
Initial Weight or Weight Loss Not Factors in Predicting Remission**

**SAN DIEGO, CA – JUNE 20, 2012** – Some bariatric surgery patients are more likely to achieve complete remission of their Type 2 diabetes than others, according to a new study\* presented here at the 29<sup>th</sup> Annual Meeting of the American Society for Metabolic & Bariatric Surgery (ASMBS).

The study found 67 percent of gastric bypass patients achieved diabetes remission one year after surgery, but that number grew to more than 96 percent if patients were not already on insulin and did not have reduced pancreatic function as measured by the glucose disposition index (GDI). If GDI was 30 percent of normal, patients were less likely to achieve remission. GDI shows both how well the pancreas produces insulin and how effectively the body uses that insulin to regulate the metabolism of carbohydrates and fats.

The study also found a patient's initial weight before surgery or weight loss after six weeks or one year, did not impact remission rates. Researchers defined remission as no longer requiring medication to achieve adequate control of elevated blood sugar.

"The study shows beta cell function, the cells in the pancreas that produce insulin, and insulin dependence, not initial weight or subsequent weight loss, are the greatest predictors of potential diabetes remission after gastric bypass," said Richard A. Perugini, MD, a bariatric surgeon at University of Massachusetts (UM) Medical Center in Worcester and lead study author. "The study further confirms Type 2 diabetes becomes more difficult to manage as it progresses."

The study included 139 gastric bypass patients, ages 48 to 57 who, before surgery, had a body mass index (BMI) between 33 and 75, and required medication to manage their Type 2 diabetes. Within two weeks of surgery, 36 percent of all patients no longer needed diabetic medications. That number rose to 46 percent at six weeks, 57 percent at six months and 67 percent after one year. However, nearly all the patients (>96%) on diabetes medications other than insulin and with a GDI that had not fallen below 30 percent of normal, achieved remission. In addition, all patients' hemoglobin A1c (HbA1c), a measure of glucose levels in the blood, went from an average of 6.9 percent to 6.1 percent over the one-year time period.

Researchers noted gastric bypass helps people control diabetes through mechanisms other than weight loss, though weight loss is known to be effective in managing Type 2 diabetes. In this study, patients on average lost 59 percent of their excess weight and 15 BMI points after one year.

Gastric bypass surgery, which makes the stomach smaller and allows food to bypass part of the small intestine, causes physiological changes, including alterations to the level of the gut hormones that regulate the metabolism of sugars and fats.<sup>12</sup> Studies have shown the surgery improves Type 2 diabetes even before significant weight loss has occurred.<sup>3</sup>

The American Diabetes Association recommends people with Type 2 diabetes and a BMI of 35 or more (about 60 pounds overweight) should consider bariatric surgery. According to the Centers for Disease Control and Prevention (CDC), the number of Americans with diabetes has tripled in the past 30 years to more than 20 million. CDC reports over half of Americans with Type 2 diabetes have a BMI greater than or equal to 30 and about 80 percent of those with BMI greater than or equal to 35 have one or more metabolic diseases.<sup>4</sup> Type 2 diabetes is the seventh leading cause of death in the United States.<sup>5</sup>

In addition to Dr. Perugini, study UM Medical Center co-authors include John J. Kelly, MD, Philip Cohen, MD, Donald R. Czerniach, MD and Karen A. Gallagher-Dorval, RN.

### **About Obesity and Metabolic and Bariatric Surgery**

Obesity is one of the greatest public health and economic threats facing the United States.<sup>6</sup> Approximately 72 million Americans are obese<sup>7</sup> and, according to the ASMBS, about 18 million have morbid obesity. Obese individuals with a BMI greater than 30 have a 50 to 100 percent increased risk of premature death compared to healthy weight individuals as well as an increased risk of developing more than 40 obesity-related diseases and conditions including Type 2 diabetes, heart disease and cancer.<sup>8,9</sup> The federal government estimated that in 2008, annual obesity-related health spending reached \$147 billion,<sup>10</sup> double what it was a decade ago, and projects spending to rise to \$344 billion each year by 2018.<sup>11</sup>

Metabolic/bariatric surgery has been shown to be the most effective and long lasting treatment for morbid obesity and many related conditions and results in significant weight loss.<sup>12,13,14</sup> In the United States, about 200,000 adults have metabolic/bariatric surgery each year.<sup>15</sup> The Agency for Healthcare Research and Quality (AHRQ) reported significant improvements in the safety of metabolic/bariatric surgery due in large part to improved laparoscopic techniques.<sup>16</sup> The risk of death is about 0.1 percent<sup>17</sup> and the overall likelihood of major complications is about 4 percent.<sup>18</sup>

### **About the ASMBS**

The ASMBS is the largest organization for bariatric surgeons in the world. It is a non-profit organization that works to advance the art and science of bariatric surgery and is committed to educating medical professionals and the lay public about bariatric surgery as an option for the treatment of morbid obesity, as well as the associated risks and benefits. It encourages its members to investigate and discover new advances in bariatric surgery, while maintaining a steady exchange of experiences and ideas that may lead to improved surgical outcomes for morbidly obese patients. For more information, visit [www.asmb.org](http://www.asmb.org).

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**\*PL-110: Predictors of Remissions of Type 2 Diabetes Mellitus Following Roux En Y Gastric Bypass**  
*Dr. Richard A. Perugini; John J. Kelly, MD; Philip Cohen, MD; Donald R. Czerniach, MD;*  
*Karen A. Gallagher-Dorval, RN*

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