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**NEW STANFORD UNIVERSITY STUDY SHOWS RISK FACTORS FOR HEART ATTACK  
REMAIN LOW SEVEN YEARS AFTER GASTRIC BYPASS**

**SAN DIEGO, CA – JUNE 20, 2012** – Total cholesterol, triglycerides and C-reactive protein levels are among 11 risk factors for heart attack that remained greatly reduced up to seven years after gastric bypass surgery, according to a new Stanford University study\* presented here at the 29<sup>th</sup> Annual Meeting of the American Society for Metabolic & Bariatric Surgery (ASMBS). Researchers say the study is the first to demonstrate a long-term and sustained cardiac benefit for patients after gastric bypass across so many risk factors.

“Patients significantly decreased their risk for having a heart attack within the first year of surgery and maintained that benefit over the long-term,” said lead study author John Morton, MD, Associate Professor of Surgery and Director of Bariatric Surgery at Stanford Hospital & Clinics at Stanford University. Researchers also noted significant decreases in blood pressure and diabetes markers like fasting insulin and hemoglobin A1c.

Dr. Morton, a bariatric surgeon, and colleagues, studied 182 patients who had gastric bypass surgery and follow-up beyond three years at Stanford between 2003 and 2011. Patients were on average 44-years-old, and had an average body mass index (BMI) of 47.

Study investigators analyzed changes to 11 cardiac risk factors that have been shown to increase the likelihood of future heart attacks or coronary artery disease. These markers included lipid and cholesterol levels, metabolic syndrome, homocysteine (amino acid) levels, Framingham Risk Score and C-reactive protein levels, a measure of inflammation that Dr. Morton says may be the single most important predictor of future heart disease.

In up to seven years of follow-up, patients maintained a loss of about 56 percent of their excess weight, going from about 286 pounds, to about 205 pounds after surgery. Before surgery, nearly one-in-four patients were on statins, cholesterol lowering medications, which were discontinued shortly after surgery.

Patients saw a 40 percent increase in high-density lipoproteins (“good cholesterol”), a 66 percent drop in fasting insulin levels and sharp drops in triglycerides, which were reduced by 55 percent. High sensitivity C-reactive protein fell by 80 percent (10.9 to 2.6 mg/dL). The Framingham Risk Score, a composite predictive tool for future cardiac events, also decreased by nearly 40 percent.

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“An 80 percent reduction in the C-reactive protein level is an astounding drop,” said Dr. Morton. “This is significantly better than what the best medical therapy has been shown to achieve and underscores the inflammatory nature of obesity, which can be reversed with surgical weight loss.”

According to the Centers for Disease Control and Prevention (CDC) and American Heart Association, C-reactive protein levels greater than three indicate a higher risk for cardiovascular disease including heart attack and stroke.<sup>1</sup> Heart disease is the leading cause of death in the United States<sup>2</sup> and the main cause of heart attack,<sup>3</sup> with obesity as a leading preventable risk factor.<sup>4</sup>

In addition to Dr. Morton, study co-authors include Nayna Lodhia, Leanne Almario, Adam Eltorai, Jaffer Kattan, Matthew Kerolus, and Margaret Nkansah – all from Stanford University.

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

Obesity is one of the greatest public health and economic threats facing the United States.<sup>5</sup> Approximately 72 million Americans are obese<sup>6</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>7,8</sup> The federal government estimated that in 2008, annual obesity-related health spending reached \$147 billion,<sup>9</sup> double what it was a decade ago, and projects spending to rise to \$344 billion each year by 2018.<sup>10</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>11,12,13</sup> In the United States, about 200,000 adults have metabolic/bariatric surgery each year.<sup>14</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>15</sup> The risk of death is about 0.1 percent<sup>16</sup> and the overall likelihood of major complications is about 4 percent.<sup>17</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-114: Long Term Improvement in Biochemical Cardiac Risk Factors Following Gastric Bypass**  
*Dr. John Morton; Nayna Lodhia; Leanne Almario; Adam Eltorai; Jaffer Kattan; Matthew Kerolus; Margaret Nkansah*

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