

Bariatric surgery significantly improves lipid profile in obese patients

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Fifty years after the first reported partial-ileal bypass, metabolic surgery has an established role in achieving weight loss and reducing cardiovascular death in obese patients. Scientists have now demonstrated that it can significantly benefit the lipid profiles of these patients a year and more after surgery, according to a new report published in *The American Journal of Medicine*.

Bariatric (weight reduction) [surgery](#) has evolved into four dominant procedures ranging from largely malabsorptive to completely restrictive: Bilio-pancreatic Diversion (BPD), Roux-en-Y Gastric Bypass (RYGBP), Adjustable Gastric Banding, and Sleeve Gastrectomy. These are regarded as the most effective therapies for treating obesity.

Investigators undertook a meta-analysis of studies on contemporary bariatric surgery outcomes to describe the effects of these procedures on serum lipids of [obese patients](#) at one year and more after surgery.

"These procedures have shown significant benefits beyond weight reduction, including improvements in serum lipids. However, changes in serum lipids beyond the period of early, rapid [weight loss](#) are not well characterized," explained lead investigator Sean Heffron, MD, of the Division of Cardiology at NYU Langone Medical Center.

Investigators identified 178 studies that fit the criteria for inclusion in this analysis. Each study needed to involve 20 or more obese adults undergoing RYGBP, Adjustable Gastric Banding, Sleeve Gastrectomy,

or BPD, report lipid profile at baseline, and provide follow-up data for at least one year. More than 25,000 patients with nearly 48,000 patient-years of follow-up were included. At the time of surgery, patients were generally between 35 and 45 years old with body mass index (BMI) of between 40 and 50. The mean follow-up across all studies was 27.9 months.

In patients undergoing any form of bariatric surgery, compared to baseline, there were significant reductions in total cholesterol, [low density lipoprotein](#) cholesterol, and triglycerides, and a significant increase in high density lipoprotein cholesterol. The magnitude of this change was significantly greater than that observed in non-surgical control patients.

When assessed separately, the magnitude of changes varied greatly by surgical type. Only RYGBP showed improvements in each lipid parameter relative to controls at both one year and last follow-up beyond one year. In the cases of Adjustable Gastric Banding and Sleeve Gastrectomy the response at one year following surgery was not significantly different from non-surgical control patients.

"Differences in triglyceride reduction among procedures were most evident at more than one year after surgery, when reductions in subjects undergoing RYGBP and BPD were nearly 50% greater than in Adjustable Gastric Banding and Sleeve Gastrectomy, despite similar baseline BMI in RYGBP and Adjustable Gastric Banding cohorts," observed Dr. Heffron. "Part of this difference may be secondary to greater weight loss and improvements in insulin sensitivity achieved following RYGBP and BPD versus restrictive procedures. However, the anatomic alterations of RYGBP and BPD may also play important roles. These differences may be relevant in deciding the most appropriate technique for a given patient."

More information: "Changes in Lipid Profile of Obese Patients following Contemporary Bariatric Surgery: A Meta-Analysis," *The American Journal of Medicine*, 2016.

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