



# Sleeve Gastrectomy Compares Favorably to Gastric Bypass in Weight Loss and Diabetes Resolution in a Community Practice

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## ABSTRACT

**Introduction:** Laparoscopic Sleeve Gastrectomy (LSG) is becoming a viable option as a primary treatment for morbid obesity, and some reports have suggested an immediate and hormonal effect in improving diabetes mellitus. Our practice has seen such an effect clinically, and wanted to compare results of the LSG with our Laparoscopic Gastric Bypass (LGBP) procedure.

**Methods:** The charts of 1601 patients (835 LGBP, 766 LSG) between 2002 and 2010 were reviewed, of these, data was collected on 123 LGBP and 139 LSG patients with diabetes. Follow-up data was available for 52 of LGBP and 70 of LSG patients greater than 2 months post operatively. Diabetes resolution was determined by cessation of diabetes treatment medications. Weight loss was measured by percent change in Excess BMI (%EBMIL).

**Results:** In the immediate post-operative period (<2 months), diabetes resolved in 77.2% of LGBP and 77.0% of LSG patients (p=NS). Diabetes medication cessation was maintained in 57.7% of LGBP and 84.3% of LSG patients beyond 2 months. Weight loss, measured by %EBMIL, was 41.5, 64, 87.6, and 78.1 for the LGBP and 41.7, 48.4, 78.5, and 79 for the LSG patients at 3, 6, 12, and 24 months respectively.

**Conclusion:** In our practice, the LSG compared favorably with the LGBP in both weight loss and diabetes resolution in the short-term. Greater, and more accurate follow-up data is needed.

## Background:

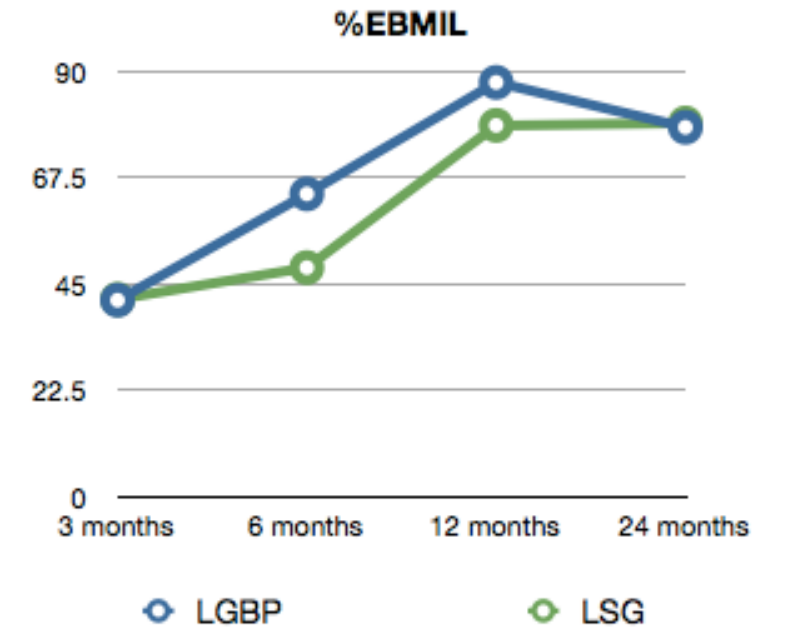
Our practice has offered the LSG since 2006, and we noted from the beginning that many patients not only achieved significant weight loss but also had blood sugar control similar to our gastric bypass patients. Reports have suggested a hormonal basis for the changes seen in blood sugar brought on by the LSG operation<sup>1</sup>. We conducted a chart review of 1601 of our post-operative LGBP and LSG patients to determine statistically, if indeed the LSG compared favorably with the LGBP in respect to weight loss and blood sugar control that we were seeing clinically.

## Methods:

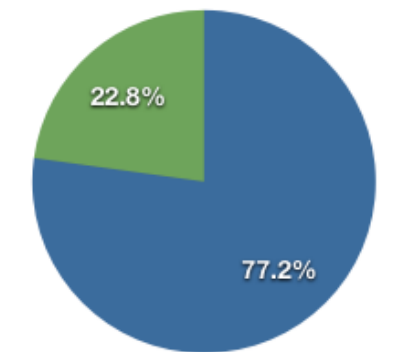
A graduate student in nutrition conducted a retrospective review of 1601 charts of our community practice bariatric surgery program, and clinical information was extracted for statistical analysis. Of the 1601 patients, 262 (16%) were diagnosed with diabetes and follow-up data was available for 122 (47%). Diabetes resolution was defined as the removal of all diabetes medications from the patient's medications regimen. Student t-test was used to determine statistical difference. Weight loss was evaluated by the percent excess BMI loss achieved by the patients at 3, 6, 12 and 24 months using the formula  $[(\text{PreBMI} - \text{PostBMI}) / (\text{PreBMI} - 25) \times 100]$ .

## Results:

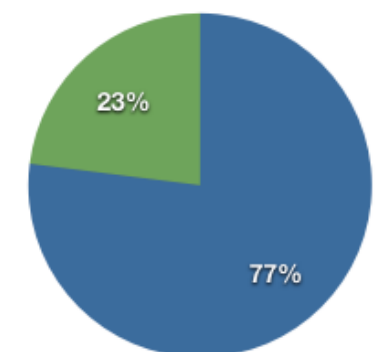
In the immediate post-operative period ( $\leq 2$  months), diabetes resolved in an equal number of LGBP (77.2%) and LSG (77.0%) patients (p=NS)(Figures 1 & 2). Of the patients that were taken off medications in the first two months post-operatively, diabetes medication cessation was maintained in 57.7% of LGBP and in 84.3% of LSG patients beyond two months. The LGBP group had a greater number of patients who were further out from their procedure, which may account for this difference, but this was not statistically analyzed. Weight loss, measured by percent excess BMI loss is shown graphically in Figure 3 for both procedures.



LGBP: Early Diabetes Resolution



LSG: Early Diabetes Resolution



Resolved Unresolved

Resolved Unresolved

## Conclusion:

In our community bariatric practice the LSG compared favorably to the LGBP in both weight loss and diabetes resolution. This confirms statistically what we had been seeing clinically for some time, that the LSG has comparable efficacy to the gastric bypass. We have also shown in a prior study that complications can be decreased when using the LSG as a primary bariatric procedure<sup>2</sup>. More accurate follow-up data is needed in our patient population for future evaluation.

## Bibliography:

<sup>1</sup> Peterli R, Wonerhanssen B, Peters T et al. Improvement in glucose metabolism after bariatric surgery: comparison of laparoscopic Roux-en-Y gastric bypass and laparoscopic sleeve gastrectomy: a prospective randomized trial. Ann Surg. 2009; 250(2):234-41.

<sup>2</sup> Bayham BE, Greenway FL, Bellanger DE, O'Neil CE. Early resolution of type 2 diabetes seen after Roux-en-Y gastric bypass and vertical sleeve gastrectomy. Diabetes Technol Ther. 2012; 14(1):30-4.

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