

## **Fundus To Antrum Ratio Measured Within One Week After Endoscopic Sleeve Gastroplasty Predicts Total Body Weight Loss Over Time**

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**Background:** Endoscopic sleeve gastroplasty (ESG) is a minimally invasive, restrictive bariatric procedure that limits the risks of standard bariatric surgery to obtain desired weight loss. This study was designed to evaluate the fluoroscopic measurement of gastric dimensions after ESG as a predictor of Total Body Weight Loss (TBWL) over time.

**Methods:** Post ESG patients were enrolled prospectively between August 2013 and August 2019. Between January 2015 and March 2018, an upper gastrointestinal (GI) fluoroscopy was obtained within 7 days after the procedure. Two blinded, independent radiologists reviewed fluoroscopic images and measured gastric lumen transverse diameter in three separate areas of the fundus, body, and antrum. The primary outcome was achieving a TBWL of ten percent or more after ESG. Secondary outcomes were achieving 5 and 15% or more of TBWL after ESG.

**Results:** 162 patients were included in the analysis and 65% were female and had a mean BMI of  $39 \pm 6$  at baseline. Patients had a mean maximum TBWL of  $16.5 \pm 8.3\%$ . 92, 75, and 50% of patients achieved a TBWL of 5%, 10%, or 15% or more, respectively. The mean post-procedural UGI gastric fundus/antrum transverse measurement ratio was  $1.2 \pm 0.6$ , and fundus/body ratio was  $3.3 \pm 1.1$ .

**Conclusions:** Our study revealed a mean TBWL of 17% supporting the notion that ESG is effective for achieving weight loss. Measuring gastric fundus/antrum ratio within one week of ESG is a consistent and independent predictive measure of sustained TBWL during long-term follow up.