

# The Influence of Sleeve Gastrectomy on Appetite, Body Composition and Energy Expenditure: A Study Protocol

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## ABSTRACT

Sleeve gastrectomy has become one of the most common medical therapies for patients who complain of obesity and comorbidities associated with it. However, numerous reports have shown an increase in body weight after sleeve gastrectomy; therefore, this area requires further investigation. Evidence has shown that there are changes in appetite hormones post sleeve gastrectomy including leptin, ghrelin, cholecystokinin, glucagon-like-peptide 1, peptide tyrosine-tyrosine, and insulin. The main objectives of the current study are 1) to assess the changes in appetite before and after meal consumption at baseline, 3 months, 6 months, and 12 months after sleeve gastrectomy, 2) to assess the interrelationship between dietary intake, body composition, energy expenditure, and physical activity prior and post sleeve gastrectomy. Patients (n=150) will be recruited from King Abdullah bin Abdulaziz University Hospital, Saudi Arabia. A general physical activity assessment, basal measurements including body height, weight, waist circumference, resting metabolic rate measurement, body composition assessment using bioelectrical impedance, dual-energy X-ray absorptiometry, and 24 h food records will be conducted during all the sessions. Blood samples and a visual analog scale will be obtained to measure appetite at four time points prior and an hour following meal consumption. The results of this study will elucidate the reason underlying the regain of body weight in patients one year after sleeve gastrectomy.

**Keywords:** Sleeve gastrectomy, appetite, appetite hormones, resting metabolic rate, body composition

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