

What do we know about weight regain following the sleeve gastrectomy weight loss operation?

Obesity is increasingly common and has devastating effects on society. When an individual is obese, they are more likely to have heart disease, lung disease, diabetes and cancer. Furthermore, obese people have less quality of life and die younger than their non-obese peers. While there is no cure for obesity, weight-loss surgery has been proven to be safe and gives good, long-lasting weight loss results.

Sleeve gastrectomy is one type of weight-loss surgery. It involves removing the majority of the stomach to leave only a narrow tube in its place – a ‘sleeve’. After a sleeve gastrectomy, patients are unable to eat the amounts of food they once were. Patients lose weight rapidly and tend to achieve their lowest weight about 18 months after the surgery. After that though, there seems to be a trend towards weight regain. Furthermore, we noticed that the onset of weight regain tended to start around the same time patients were discharged from follow-up support. To explore this issue further we conducted an extensive review of the existing literature which looked at weight regain after the sleeve gastrectomy.

DEFINITION	Occurrence
An increase in body weight of 10kg from nadir	6
An decrease in %EWL of 25%	2
Any weight regain	2
An increase in BMI of 5kg/m ² from nadir	1
Regain weight to a BMI > 35 kg/m ²	1

Tab. 1. Definitions of weight regain following sleeve gastrectomy reported by systematic review. Number in brackets refers to the number of times the definition was employed in the literature when referring to sleeve gastrectomy.

From this review, it was clear that researchers and clinicians are not using a uniform definition for weight regain. In fact, six different definitions were found in the literature (Tab. 1). This means that we cannot compare the rates of weight regain between different healthcare centres as they are measuring different things.

Follow-up length	Number of patients	REGAIN RATE
Two to three years	328	6 – 20 %
Five years	74	19 – 30 %
More than five years	101	40 – 76 %

Tab. 2. Reported rates of weight regain following sleeve gastrectomy.

The second important finding was that the rates of weight regain were not consistently reported. Some studies reported no rate at all. When studies did report a rate it was very variable ranging from 6% of patients at two years to 76% of patients at six years following their sleeve gastrectomy (Tab. 2). The variability in these rates is explained by the lack of a uniform definition and differences in the operative technique and populations studied. As such, we still do not know what the true rate of significant weight regain following sleeve gastrectomy is.



Fig. 1. Proposed causes for weight regain following sleeve gastrectomy.

The third group of results from this systematic review concerned the cause or causes of weight regain. No studies provided strong evidence for the definitive cause of weight regain after a sleeve gastrectomy. However, several studies proposed factors which are likely to contribute to weight regain (Fig. 1). These factors included the initial size of the 'sleeve', stretching of the 'sleeve', blood levels of the hunger hormone ghrelin, a lack of follow-up support and difficulties in maintaining healthy eating and exercise patterns.

This study provides us with a current summary of the body of knowledge regarding weight regain following sleeve gastrectomy. It has highlighted the need for a uniform definition. The range of rates for weight regain suggests that this may be a common problem but we do not fully understand what the true rate of regain is. Understanding the potential causes of weight regain is useful information to help with creating interventions that prevent or reduce weight regain following sleeve gastrectomy.

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