

# Short-Term Preoperative Weight Loss and Postoperative Outcomes in Bariatric Surgery

Hutcheon DA, Hale AL, Ewing JA, Miller M, Couto F, Bour ES, Cobb WS, Scott JD.

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## Introduction:

- The objective of this study was to determine the impact of short-term preoperative excess weight loss (EWL) on postoperative outcomes in patients undergoing primary vertical sleeve gastrectomy (SG) or Roux-en-Y gastric bypass (RYGB) surgery.
- The primary outcome was percent excess weight loss (% EWL) at 1, 3, 6, and 12 months postoperatively.
- The objective of this study was to investigate the efficacy and acceptability of a preoperative VLED (<800 calories/day).

## Methods:

- Metabolic and Bariatric Surgery Accreditation and Quality Improvement database was used to identify patients who underwent SG or RYGB between 2014 and 2016.
- **Inclusion Criteria**
  - 21 to 75 years old at program enrollment.
  - BMI  $\geq 35$  kg/m<sup>2</sup> at initiation of low calorie (1200 calories/day) diet (LCD) (OPTIFAST®).
  - Completed program-recommended LCD for 4 weeks immediately preceding surgery and successfully underwent surgical procedure (SG or RYGB).
  - No documented postoperative diagnosis of chronic illness that would affect achieving/maintaining weight loss.
  - Pre-op patients (N=355) were divided into 2 cohorts and analyzed according to those who achieved  $\geq 8\%$  EWL (n=224) during the 4-week LCD period and those who did not achieved  $\geq 8\%$  EWL (n=131).
- **Exclusion Criteria**
  - Patients who had pre-op nutrition and/or psychological evaluation by HCP outside primary center.
  - Did not complete the pre-op LCD protocol.
  - Completed the LCD protocol more than once.
  - Required surgical revision.

## Pre-Operative Interventions:

- Evaluated by program RDN, LCSW, and surgeon.
- Attended 10 face-to-face support groups addressing behavioral lifestyle interventions.
- Completed program-recommended LCD for 4 weeks immediately preceding surgery.
- LCD defined as 1,200 calories/day (5 OPTIFAST® meal replacement products plus 1 food-based meal).
- Lost  $\geq 8\%$  of excess weight while following the LCD.
- Consumed  $\geq 80$  fl oz calorie-free, caffeine-free, carbonation-free beverages/day.
- Participated in at least 30 minutes of exercise/day.
- Adherence monitored using diet and exercise logs reviewed at required weekly group sessions.
- Weight, BMI, % EWL, and diet compliance documented in the EHR at weekly visits.
- Weight obtained at completion of the LCD served as final weight before surgery.
- Upon completion of LCD, patients underwent surgery.

## Post-Operative Interventions:

- Progressed from full liquid diet (for 17-24 days post op), to pureed diet (for 7-10 days), to soft diet (for 10-14 days), and then to a bariatric food-based diet for life.
- Advised to consume 80-90 g protein/day and 64 fl oz/day.
- Expected to take multivitamin-mineral supplementation.
- Instructed to exercise at least 15-30 minutes/day.
- Advised to return to primary program office at post-op months 1, 3, 6, and 12 for continued follow-up.
- Weight, BMI, % EWL, compliance, and complications documented in EHR at each visit.

## Results:

- 355 patients underwent SG (n=167) or RYGB (n=188) and met inclusion criteria.
- 63.3% (n=224) patients achieved  $\geq 8\%$  EWL during the pre-op 4-week LCD; 36.9% (n=131) did not.
- No significant differences in pre-op comorbidities or surgery type between groups.
- $\geq 8\%$  EWL group experienced significantly shorter post-op hospital LOS (1.8 days vs. 2.1 days,  $p=0.006$ ).
- Median operative duration was not significantly different between groups, but was 8 minutes faster in the  $\geq 8\%$  EWL group (117 vs. 124 minutes,  $p=0.061$ ).
- No significant differences in post-op readmission and reoperation between groups.
- $\geq 8\%$  EWL pre-op group experienced significantly higher average % EWL at post-op month 3 ( $42.3\% \pm 13.2\%$  vs.  $36.1\% \pm 10.9\%$ ,  $p<0.001$ ), month 6 ( $56.0\% \pm 18.1\%$  vs.  $47.5\% \pm 14.1\%$ ,  $p<0.001$ ), and month 12 ( $65.1\% \pm 23.3\%$  vs.  $55.7\% \pm 22.2\%$ ,  $p=0.003$ ).
- $\geq 8\%$  EWL pre-op group experienced greater change in BMI ( $3.7 \pm 1.2$  kg/m<sup>2</sup> vs.  $2.3 \pm 2.3$  kg/m<sup>2</sup>,  $p=0.021$ ).
- $\geq 8\%$  EWL during the 4-week LCD was associated with greater percent weight loss at 12 months post-op.

## Conclusion:

- Pre-op weight loss of  $\geq 8\%$  excess weight while following a 4-week LCD is associated with a significant increase in post-op % EWL over 12 months.
- $\geq 8\%$  excess weight loss group also experienced shorter operative duration and shorter hospital LOS.
- Achievement of this goal may enable patients to reap stronger post-op outcomes, including greater weight loss.

**Study summary prepared by Nestlé Health Science.**

The complete study can be accessed at:

<https://doi.org/10.1016/j.jamcollsurg.2017.12.032>