Recurrent Weight Gain after Sleeve Gastrectomy: Can Lifestyle Modification Prevent Weight Regain?

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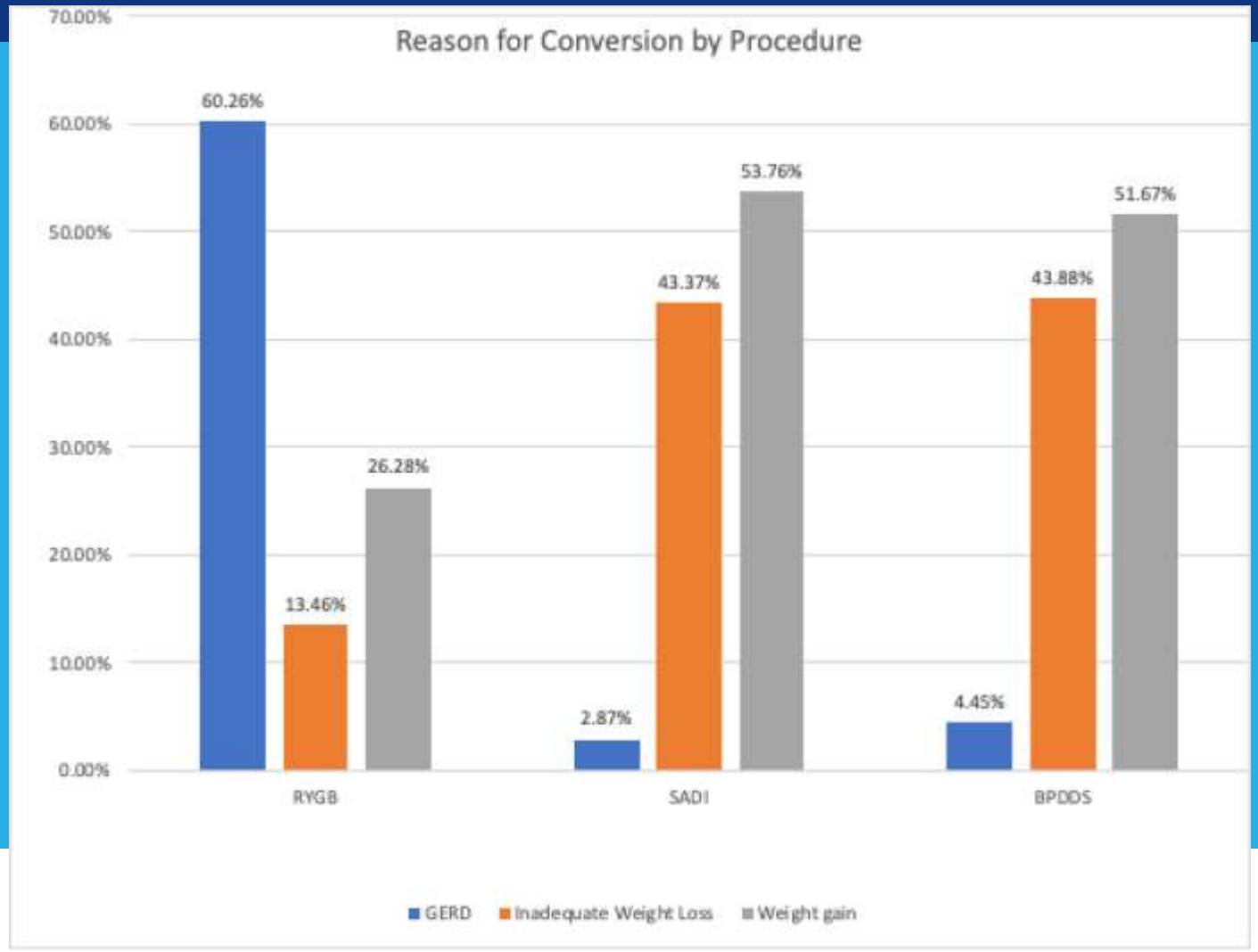
Inadequate Weight Loss or Weight Regain are Common Reasons for Conversion to a Second Procedure (Salminen et al., 2022)



Possible Reasons for Suboptimal Weight Loss Following Bariatric Surgery
(Sarwer, Dilks, West-Smith, 2012)

- Physiological adaptation
- Preoperative psychopathology
- Disordered eating
- Poor adherence to the postoperative diet and recommended behavioral program

Strategies to Improve Weight Maintenance after Bariatric Surgery

Self-monitoring of weight, dietary intake, and eating behavior

Increased levels of physical activity

Continued/ongoing patient-provider contact

Direct Intervention (Intensive Lifestyle Modification, Time Restricted Eating, Acceptance-Based Therapy)

(Sarwer, Dilks, & West-Smith, SOARD 2012; Sarwer & Heinberg, 2020)

Lifestyle Modification for Weight Control

- Caloric Restriction--Reduce energy intake by 500-1000 kcal/day (by reducing portion size, fat, and sugar).
- Physical Activity--Exercise > 180 min/week.
- Behavioral Modification—Self-monitoring of weight, caloric intake and physical activity

Lifestyle Modification for Weight Control: The Good News

- Several major efficacy studies (DPP, LookAHEAD) have shown that individuals can lose 7-10% of their initial body weight within the first 6-12 months of treatment.
- These losses are associated with significant improvements in weight related comorbidities.
- For these reasons, the AHA and TOS(2014) now consider a 5% weight loss to be “clinically significant” and an appropriate initial goal for weight loss treatment.

Lifestyle Modification for Weight Control: The Promising News

- These interventions can be effectively delivered in primary care settings, producing clinically significant weight losses and improvements in weight related comorbidities (Appel et al., 2011; Wadden et al., 2011).

- These interventions also can be effectively delivered to cancer survivors, women with infertility, and persons with other major health issues (Haggerty et al., 2017; Legro et al., 2015; Lynch et al., 2017; Schmitz et al., in press; Sturgeon et al., 2018; Winkels et al., 2017).

- Many contemporary studies now use eHealth/mHealth approaches to foster engagement and reduce burden to patients (Bennett et al., 2016; Haggerty et al., 2016; Lynch et al, 2017).

Lifestyle Modification for Weight Control: The Bad News

- eHealth/mHealth interventions appear to be somewhat less effective than interventions delivered in face-to-face interactions between patients and providers.
- Regardless of the approach, approximately one-third of patients regain weight within one year; most regain all of their weight within 5 years.
- This observation underscores the need to see weight management as a chronic, lifelong health care behavior.

Lifestyle Modification to Address Postoperative Weight Regain

Standard lifestyle modification interventions, emphasizing caloric restriction, increased physical activity, and instruction in lifestyle modification, are the cornerstone of obesity treatment.

A number of studies have evaluated the efficacy of adaptations of these interventions to improve outcomes of bariatric surgery.

A meta-analysis of the major clinical trials found minimal differences in weight loss between treatment and a range of control or comparison conditions 6-12 months (Rudolph & Hilbert, 2013).

Postoperative Behavioral Variables and Weight Change 3 Years After Bariatric Surgery (Mitchell et al. JAMA, 2016)

- Assessed 25 postoperative behaviors related to eating behavior, eating problems, weight control practices, and problematic alcohol use.
- Individuals who postoperatively started to:

  Weighed themselves weekly

  Stopped eating when full

  Stopped eating continuously during the day
- Lost 14% more weight than those who never engaged in these behaviors and lost 6% more weight than those who have always practiced these behaviors (p's < .001).
- Results underscore the important role of these behaviors in postoperative success as well as the need interventions to modify these behaviors postoperatively.

Acceptance-Based Behavioral Treatment for Weight Loss

Based on the theory informing acceptance-based behavioral treatment (ABT), avoidance of uncomfortable internal experiences, such as hunger and food cravings, leads to behavioral responses that run counter to one's values. ABT emphasizes engaging in goal-directed behaviors that are in line with those values in spite of aversive or non-preferred internal experiences.

ABT has been shown to be efficacious for weight loss in persons with obesity who have not undergone bariatric surgery.

A number of small studies have investigated the use of ABT in patients who have undergone bariatric surgery. These studies, while providing some support for the role of ABT after bariatric surgery, had significant methodological limitations, including small sample sizes and uncontrolled designs.

There has yet to be a large RCT investigating the efficacy of this approach.

A Pilot Study of an Acceptance-Based Behavioral Intervention for Weight Regain After Bariatric Surgery (Bradley et al. 2016)

Eight bariatric surgery patients who regained at least 10% of their maximum lost postoperative weight received the ACT intervention:

10 weekly groups sessions focused on:

Acceptance of internal experiences
Willingness
Defusion
Clarification and commitment to core values
Linking values to in-the-moment decision-making

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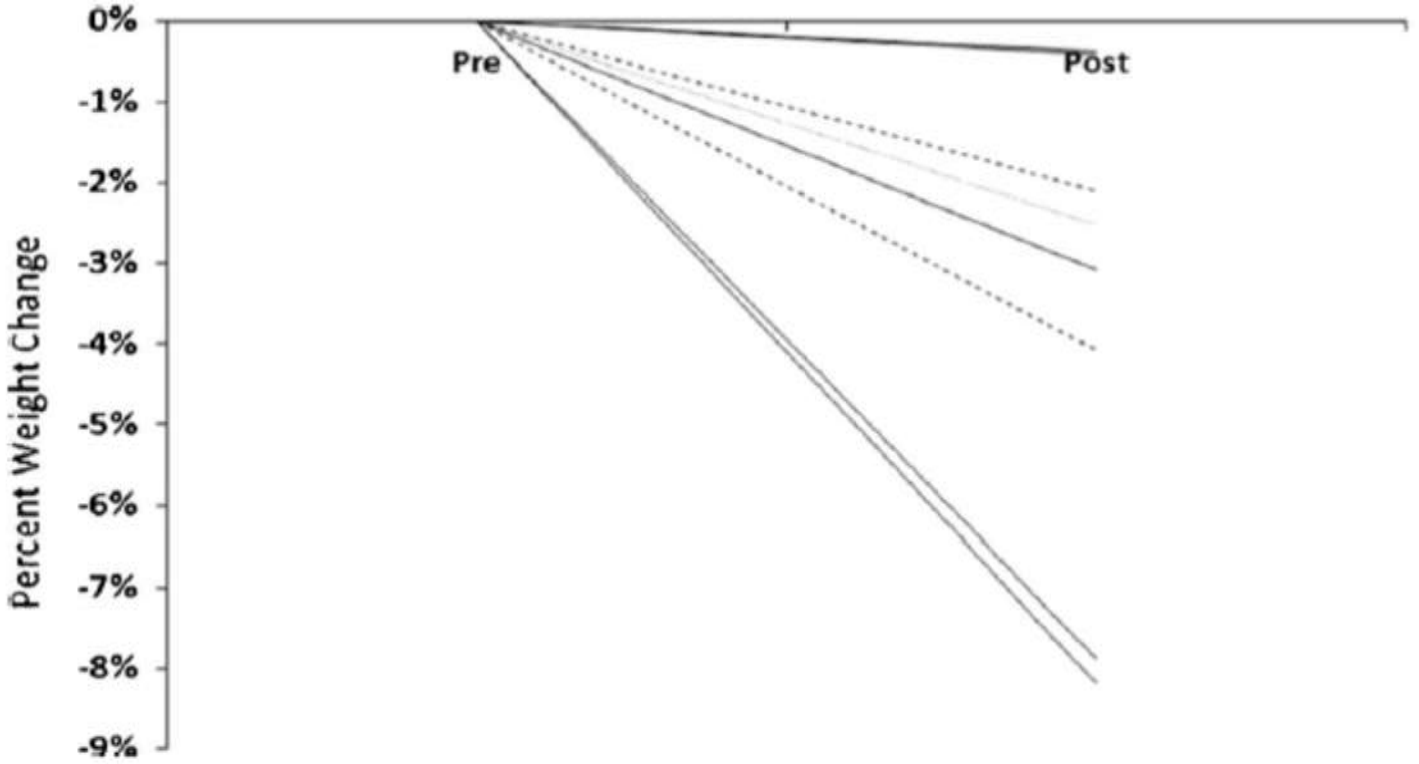

Fig. 3 Percent weight change from pre- to post-treatment by participant. —— Roux-en-Y gastric bypass. – – – Gastric sleeve. ····· Gastric banding

Summary

Traditional Lifestyle Modification Interventions appear to have modest effects on reversing postoperative weight gain.

Acceptance-based approaches, a modern interpretation of cognitive-behavioral therapy, shows promise in reversing weight regain.

Psychosocial, behavioral, and dietary issues should be re-assessed (and potentially treated) prior to a revision procedure.

There is a need for the further development of non-surgical postoperative interventions to promote lifelong weight maintenance.

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Variables that Contribute to Suboptimal Postoperative Outcomes

- Weight regain after bariatric surgery is often attributed to behavioral factors, including dietary intake, grazing (i.e., repetitive nibbling), loss of control over eating, disordered eating, low physical activity, and loss to follow-up.
- Success following bariatric surgery requires chronic adherence to a rigorous, reduced calorie diet. Unfortunately, many patients exhibit poor dietary compliance.
- The presence of postoperative binge eating, night eating, and loss of control over eating is fairly common; each has been associated with both smaller weight losses in the first postoperative year as well as weight regain over time.
- Failure to increase physical activity after surgery also has been associated with postoperative weight gain.

JAMA Surgery

RCT: Effect of Laparoscopic Sleeve Gastrectomy vs Roux-en-Y Gastric Bypass on Weight Loss, Comorbidities, and Reflux at 10 Years in Adult Patients With Obesity

POPULATION

73 Men, 167 Women

Adults aged 18-60 y with body mass index (BMI) ≥40 (or ≥35 with obesity-related comorbidity) and prior nonsurgical treatment

Mean age, 48.4 y; mean BMI, 44.6

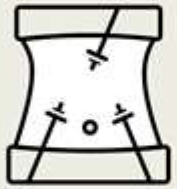
SETTINGS / LOCATIONS

3 Hospitals in Finland

INTERVENTION

240 Patients randomized

193 Analyzed for 10-y weight loss outcome



98 LSG
Laparoscopic sleeve gastrectomy

95 LRYGB
Laparoscopic Roux-en-Y gastric bypass

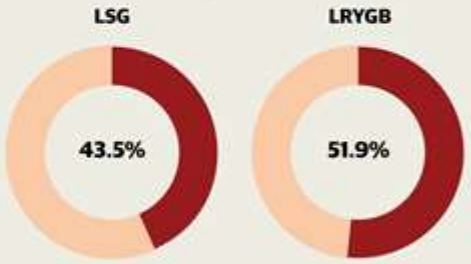
PRIMARY OUTCOME

10-y Percentage excess weight loss (%EWL), defined as the difference between initial weight and follow-up weight divided by the difference between initial weight and ideal weight for BMI of 25, multiplied by 100

FINDINGS

Both LSG and LRYGB resulted in sustainable weight loss, but 10-y %EWL was not equivalent between the 2 groups

10-y %EWL



95% CI, 39.8-47.2

95% CI, 48.1-55.6

Between-group difference in mean 10-y %EWL:
8.4 Percentage points (95% CI, 3.1-13.6)

Salminen P, Grönroos S, Helmiö M, et al. Long-term effect of laparoscopic sleeve gastrectomy vs Roux-en-Y gastric bypass on weight loss, comorbidities, and reflux in adult patients with obesity: the SLEEVEPASS randomized clinical trial. *JAMA Surg*. Published online June 22, 2022. doi:10.1001/jamasurg.2022.2229

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Technology for Behavioral Assessment and Intervention in Bariatric Surgery

Use of smart-phone or web-based technology to monitor weight, food intake, and physical activity

Use of objective monitors to assess physical activity levels

Use of Internet-based behavioral interventions

Bradley et al., 2017; Thomas et al., 2011)

Remote Delivery of Postoperative Interventions

More frequent postoperative follow-up and/or attendance at support groups is associated with greater weight loss. However, only 40% of patients return for their first year's follow-up visits; support group attendance is low and decreases over time.

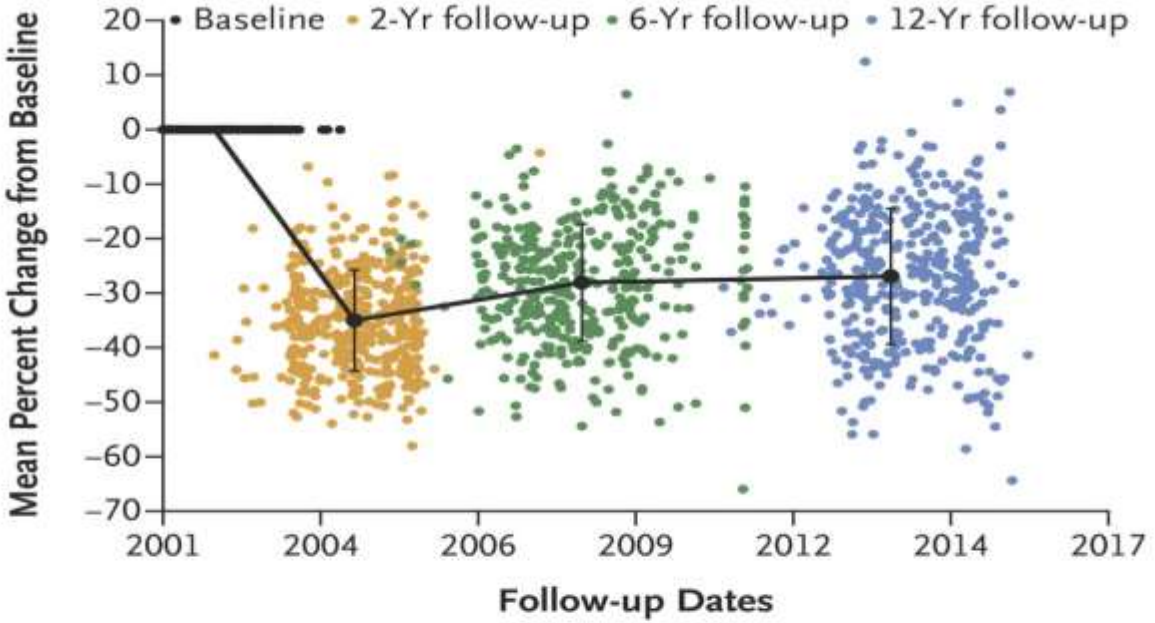
Since the pandemic, many bariatric programs have seen the value of telehealth medical appointments in bariatric care, where care can be delivered efficiently and effectively without requiring the time and expense of an in-person appointment.

Remote, and, in particular, online delivery of interventions appears well-suited to address these issues. These interventions are particularly desirable, reduced participant burden, and are cost effective. They also have been shown to result in clinically meaningful weight losses.

Mean % Wt. Change Following RYGB

(Adams et al 2017)

A Mean Percent Change in Body Weight from Baseline to Years 2, 6, and 12 in the Surgery Group



No. of Patients	Baseline	2 Yr	6 Yr	12 Yr
Surgery group	418	409	379	387
Deaths	—	3	9	14
Total	418	412	388	401

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