Factors associated with successful weight loss maintenance after bariatric surgery

Rachel L. Moore, MD, FACS, ABOM

Health ONE® Rose Medical Center

Disclosures

Consultant and professional education for Olympus, Medtronic, & GI Windows

Research with Allurion

Within This Subject

- We need to define success so that we can study results across different programs and develop best practices
- The most common definition of success after bariatric surgery that I have encountered = losing more than 50% of excess weight
- Calculating excess weight requires defining ideal body weight. Do we still agree that BMI=25 is ideal? Most bariatric surgery patients have a nadir at overweight and maintain in the class 1 obesity range (BMI 30-34)
- We also need to acknowledge that patients can have dramatically improved health and quality-of-life even without meeting a weight loss success metric

Relevant Issues

- AGE
- PARTICIPATION
- BODY MASS INDEX
- PHYSICAL ACTIVITY
- PSYCHOLOGICAL FACTORS

AGE

Juan Eduardo Contreras et al. Correlation between Age and Weight Loss after Bariatric Surgery. Obes. Surg. 2013 Aug;23(8):1286-9 doi: 10.1007/s11695-013-0905-3.

- 337 patients (196 <45yo and 141 who were 45yo and higher)
- Younger group lost more weight at 12 months postop than older group
- Gender, preop BMI, surgical technique (bypass or sleeve), and dyslipidemia were NOT significant
- Presence of hypertension was significant

Urs Pfefferkorn et al. Weight Loss After Bariatric Surgery in Different Age Groups. Obes. Surg. 2023 Apr;33(4):1154-1159. doi: 10.1007/s11695-023-06488-4.

- Retrospective of 500 consecutive patients, mean follow-up 3.6 years
- Patients had sleeve or bypass
- Five groups: <30yo, 30-39, 40-49, 50-59, 60 and higher
- <30yo %EBMIL 86.6 at nadir and 75.6 at last follow-up
- 30-39yo %EBMIL 89.5 at nadir and 78.4 at last followup
- 40-49yo %EBMIL 84.0 at nadir and 73.3 at last followup
- 50-59yo %EBMIL 77.9 at nadir and 68.0 at last followup
- 60yo and higher %EBMIL 76.4 at nadir and 69.0 at last followup
- Weight loss and total number of comorbidities that showed complete remission were both significantly higher in younger patients

PARTICIPATION

(I think “compliance” is an emotionally-charged judgmental term)

J Lujan et al. Impact of Routine and Long-Term Follow-up on Weight Loss after Bariatric Surgery. Obes. Surg. 2020 Nov;30(11):4293-4299. doi: 10.1007/s11695-020-04788-7.

- Retrospective of 385 patients with up to 5 years follow-up. Group 1 attended every postop appointment. Group 2 was lost to follow-up before one year and contacted by phone
- Excess weight loss was statistically significant between the groups. Sleeves from group 1 lost 78% and group 2 lost 39%. Bypasses from group 1 lost 75% and group 2 lost 62%.
- When the surgeries (sleeve and bypass) were compared, there was no significant difference between group 1, but for group 2 patients gastric bypass patients had more excess and total weight loss than sleeve patients

Pontiroli, AE et al. post-surgery adherence to scheduled visits and compliance, more than personality disorders, predict outcome of bariatric restrictive surgery in morbidly obese patients. Obes. Surg. 2007 Nov;17(11):1492-7. doi: 10.1007/s11695-008-9428-8.

- 172 consecutive patients who had adjustable gastric band
- All were given the NIMH Diagnostic Interview Schedule and Structured Clinical Interview for DSM-IV Axis II Personality Disorders
- BMI, compliance, and attendance at scheduled visits were all significant at 12, 24, and 36 months. Narcissistic personality only mattered (negatively) at 12 months
- At 48 months, only percentage of attendance at scheduled visits was still statistically significant

BODY MASS INDEX

Varban, OA at al. Factors Associated With Achieving a Body Mass Index of Less than 30 after Bariatric Surgery. JAMA Surg. 2017 Nov; 152(11): 1058-1064. doi: 10.1001/jamasurg.2017.2348

- Retrospective from the Michigan Collaborative database. 27320 patients who had primary bariatric surgery between 6/2006 and 5/2015
- 36% (9713 patients) of them had BMI<30 at one year after their surgery
- Significant predictors for success: BMI<40 and sleeve, gastric bypass or duodenal switch surgery (adjustable gastric band did not achieve significance)
- In patient whose preop BMI was greater than 50, only 8.5% had a BMI below 30 at one year
- *"Policies and practice patterns that delay or incentivize patients to pursue bariatric surgery only once the BMI is highly elevated can result in inferior outcomes."*

Nickel F et al. Predictors of Risk and Success of Bariatric Surgery. Obes Facts. 2019 Sep; 12(4): 427-439. doi: 10.1159/000496939

- 180 patients who underwent bypass and sleeve. Age at onset of obesity, years of obesity, Edmonton Obesity Staging System score, preop BMI and age were all studied
- Age at onset of obesity and years of obesity did not affect outcome
- Age, preop BMI and EOSS all predicted success
- High BMI patients had lower %EWL at 3, 6, and 12 months
- Older patients had lower %TWL than younger patients 12 months after surgery

PHYSICAL ACTIVITY

Bond DS et al. Becoming Physically Active after Bariatric Surgery is Associated with Improved Weight Loss and Health-related Quality of Life. Obesity 2009 Jan;17(1):78-83. doi:10.1038/oby.2008.501.

- 199 Gastric bypass patients who were at least a year out from their surgery
- International Physical Activity Questionnaire was used. Inactive defined as <200 minutes/week. Active= greater than or equal to 200 minutes/week.
- Three groups: inactive before surgery/active after surgery, active before surgery/active after surgery, inactive before surgery/inactive after surgery
- Inactive/active and Active/active had similar weight loss. Inactive/active lost more weight that Inactive/Inactive group
- Inactive/active and Active/active also scored better on mental component summary score and general health, vitality and mental health domains

Rosenberger PH et al. Physical Activity in Gastric Bypass Patients: Associations with Weight Loss and Psychosocial Functioning at 12-Month Follow-up. Obes Surg. 2011 Oct; 21(10): 1564-1569. doi:10.1007/s11695-010-0283-z

- 131 gastric bypass patients who completed measures assessing physical activity, depression, and physical and mental health
- They were studied preoperatively and again at 12 months after surgery
- Physical activity intensity was associated with better weight loss
- Physical activity frequency and intensity were associated with better psychosocial outcomes (improved depression)

PSYCHOLOGICAL FACTORS

Behaviors associated with a poor prognosis

Sheets CS et al. Post-Operative Psychosocial predictors of Outcome in Bariatric Surgery. Obes Surg. 2015 Feb; 25(2) 330-345.

Doi: 10.1007/s11695-014-1490-9

Substance use

Binge eating

Grazing/snacking or non-hungry eating

Nocturnal eating

Odom J et al. Behavioral Predictors of Weight Regain after Bariatric Surgery. Obes Surg. 2010 Mar;20(3):349-56. doi: 10.1007/s11695-009-9895-6.

- 203 patients at least one year out from bariatric surgery
- Independent predictors of weight regain: increased food urges, severely decreased postoperative well-being, and concerns over alcohol and drug use
- Higher scores on the Beck Depressive Index were associated with less risk of weight regain.
- Patients who engaged in self-monitoring were less likely to regain weight
- Related, but not statistically significant, frequency of postop visits inversely related to weight regain

So, what should we do?

- Could affect choice of procedure (more powerful interventions for BMI>50)
- One part of our multidisciplinary program may need to be emphasized for a particular patient (example: increase psychological support for the patient with depression)
- Patients at risk for obesity persistence or recurrence could be set into a more frequent follow-up schedule
- Increased emphasis on physical activity
- ”Success” definition may need to be adjusted for some populations like older patients or bigger patients

Contact Dr. Moore

Cell: 1-504-439-0345

Email: rachelmooremd4obesity@gmail.com