



Weight-Loss Surgery Overview

Weight-loss surgery is a well-established method of long-term weight control for morbidly obese adults. Compared to non-surgical treatments, weight-loss surgery yields the longest period of sustained weight loss in patients who have failed other therapies.¹

Fueled by the dismal failure of dieting, the marked improvement in quality of life and the quick recovery with minimally invasive techniques, the number of weight-loss surgery procedures performed annually has surged over the last several years. According to a recent report from the Department of Health and Human Service's (HHS) Agency for Healthcare Research and Quality (AHRQ), from 1998 to 2004, the total number of bariatric surgeries performed in the United States increased nine-fold, from 13,386 to 121,055.²

Weight-Loss Surgery Overview:^{3,4}

There are three categories of weight-loss surgery: malabsorptive, restrictive and combination.

Malabsorptive: Shortens and re-configures the digestive tract to limit the number of calories and nutrients that can be absorbed. Procedures that are only malabsorptive, as opposed to combination restrictive and malabsorptive procedures, are not commonly performed today.

Restrictive: Reduces the amount of food the stomach can hold but does not interfere with normal digestion and absorption of food and nutrients. Options include:

- *Adjustable Gastric Banding* – The LAP-BAND® System is the first FDA-approved adjustable gastric band for use in weight reduction. Using laparoscopic surgical techniques, the device is placed around the top portion of a patient's stomach, creating a small pouch. By reducing stomach capacity, the LAP-BAND® System can help achieve long-term weight loss by creating an earlier feeling of satiety. The LAP-BAND® System is adjustable, which means that the inflatable band can be tightened or loosened to help the patient achieve a level of satiety while maintaining a healthy diet. In follow-up visits, the surgeon can easily adjust the diameter of the band by adding saline via an access port just under the patient's skin. This allows the band to be modified to meet a patient's needs, which can change over time.⁵ The LAP-BAND® System is a reversible weight-loss surgery option as it can be removed at any time.
- *Vertical Banded Gastroplasty (VBG)* – A surgery where the upper stomach near the esophagus is stapled vertically to create a small pouch along the inner curve of the stomach. The outlet from the pouch to the rest of the stomach is restricted by a band made of special material. The band delays the emptying of food from the pouch, causing a feeling of fullness. Although VBG was fairly common in the late 1980s and early 1990s, it has been superseded since 1995 by adjustable band and combination procedures. Other gastroplasty procedures, including horizontal gastroplasty and gastric partitioning without a band, are no longer performed because of their high rates of failure.



Combination: Restricts the amount of food the stomach can hold and reduces the number of calories absorbed by re-configuring the digestive tract. Options include:

- *Gastric Bypass (also called Roux-en-Y Gastric Bypass [RYGB])* – With this surgery, the stomach is first stapled to make a smaller pouch, then most of the stomach and the upper part of the intestine (the duodenum) is bypassed by attaching (usually stapling) a lower part of the intestine (the jejunum) to the small stomach pouch. The result is that the individual can not eat as much and absorbs fewer nutrients and calories.
- *Biliopancreatic Diversion (BPD)* – About 70% of the stomach is removed, though the remaining capacity is greater than with RYGB, so patients eat relatively normal-sized meals. The remaining smaller stomach pouch is connected to the final segment of the small intestine (the ileum), bypassing both the duodenum and the jejunum. As a result, the protein, carbohydrate and fat in foods are not mixed with the bile and pancreatic enzymes that would normally break them down until they reach the the ileum, so their absorption is greatly reduced.



OVERVIEW OF MAJOR WEIGHT-LOSS SURGERY OPTIONS^{3,4}

| | Combination Malabsorptive and Restrictive | | Restrictive | |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Biliopancreatic Diversion (BPD) | Gastric Bypass | Vertical Banded Gastroplasty | LAP-BAND® System |
| Weight Loss | <ul style="list-style-type: none"> Greatest amount of initial weight loss due to high levels of malabsorption | <ul style="list-style-type: none"> Rapid initial weight loss Some weight regain over several years | <ul style="list-style-type: none"> Consistent and continued long-term weight loss | <ul style="list-style-type: none"> Consistent and continued long-term weight loss |
| Permanent/ Reversible | <ul style="list-style-type: none"> Permanent alterations to stomach Non-adjustable | <ul style="list-style-type: none"> Permanent alterations to stomach and digestive process Non-adjustable | <ul style="list-style-type: none"> Extremely difficult to reverse Non-adjustable | <ul style="list-style-type: none"> No permanent alterations to stomach or digestive process Band adjustable and removable |
| Vitamin and Mineral Loss | <ul style="list-style-type: none"> Decreased vitamin and mineral absorption – may lead to malnutrition Requires lifelong monitoring for malnutrition, anemia and bone disease | <ul style="list-style-type: none"> Decreased vitamin and mineral absorption – may lead to malnutrition Daily vitamin/mineral supplements required Lifelong medical follow-up and monitoring of blood levels | <ul style="list-style-type: none"> No vitamin or mineral loss Vitamin/protein supplements are recommended | <ul style="list-style-type: none"> Little vitamin or mineral loss, if any Vitamin/protein supplements are recommended |
| Procedure/ Recovery | <ul style="list-style-type: none"> Requires cutting and stapling of stomach and bowel More operative complications than with all other surgery options Highest mortality rate as compared to other procedures | <ul style="list-style-type: none"> Requires cutting and stapling of stomach and bowel More operative complications than with LAP-BAND® System Higher mortality rate than LAP-BAND® System or VBG procedures | <ul style="list-style-type: none"> Requires cutting and stapling of stomach Rarely performed with minimally invasive approach | <ul style="list-style-type: none"> No stomach cutting, stapling or intestinal re-routing Safer and less invasive procedure Lower early complication rate Reduced pain, length of hospital stay and recovery period |

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1 American Society for Bariatric Surgery. Rationale for the Surgical Treatment of Morbid Obesity. Available at www.asbs.org/html/rationale/rationale.html. Accessed 1/17/07.

2 Zhao, Y. (Social and Scientific Systems, Inc.), and Encinosa, W. (AHRQ). Bariatric Surgery Utilization and Outcomes in 1998 and 2004. Statistical Brief #23. January 2007. Agency for Healthcare Research and Quality, Rockville, Md. www.hcup-us.ahrq.gov/reports/statbriefs/sb23.pdf.

3 Shekelle PG, Morton SC, Maglione MA, Suttrop M, Tu W, Li Z, Maggard M, Mojica WA, Shugarman L, Solomon V, Jungvig L, Newberry SJ, Mead D, Rhodes S. Pharmacological and Surgical Treatment of Obesity. Evidence report/Technology Assessment No. 103. (Prepared by the Southern California–RAND Evidence-Based Practice Center, Santa Monica, CA, under contract Number 290-02-0003.) AHRQ Publication No. 04-E028-2. Rockville, MD: Agency for Healthcare Research and Quality. July 2004. (Pages 5 and 6).

4 American Society for Bariatric Surgery. Story for surgery for obesity. Available at <http://www.asbs.org/html/patients/story.html>. Accessed 1/23/07.

5 Allergan. The LAP-BAND[®] System Overview. Available at <http://www.lapband.com/lapband/aboutlapband.do>. Accessed 1/23/07.