

Overview

- ◆ Metabolic/bariatric surgery is the most effective and long-lasting treatment for severe obesity resulting in significant weight loss and leading to the improvement, prevention or resolution of many related diseases including type 2 diabetes, heart disease, hypertension, sleep apnea, and certain cancers^{1,2}
- ◆ Studies show bariatric surgery may reduce a patient's risk of premature death by 30-50%^{3,4}
- ◆ Overall, bariatric surgery has complication and mortality rates (4% and 0.1%, respectively) comparable to some of the safest and most commonly performed surgeries in the U.S. including gallbladder surgery, appendectomy and knee replacement⁵

EFFECTIVENESS

- Studies show patients typically lose the most weight one-to-two years after bariatric surgery, and maintain substantial weight loss with improvements in obesity-related conditions^{6,7}
 - Patients may lose as much as 60% of excess weight six months after surgery, and 77% of excess weight as early as 12 months after surgery⁸
 - On average, five years after surgery, patients maintain 50% of their excess weight loss⁹
- Majority of bariatric surgery patients with diabetes, hyperlipidemia, hypertension, and obstructive sleep apnea experience complete resolution or improvement (JAMA, 2004)¹⁰

<u>Condition/Disease</u>	<u>Resolved or Improved</u>	<u>Resolved</u>
Type 2 Diabetes	86%	76.8%
Hypertension	78.5%	61.7%
Obstructive Sleep Apnea	85.7%	83.6%
Hyperlipidemia	78.5%	61.7%

- Patients with a preoperative BMI of less than 40 are more likely to achieve a BMI of less than 30 after surgery compared with patients who did not, and are more likely to experience remission of their obesity-related conditions (JAMA Surgery, 2017)¹¹
 - Achieving a BMI of less than 30 was associated with significantly higher rates of medication discontinuation for hyperlipidemia (60.7% vs. 43.2%), diabetes (insulin: 67.7% vs. 50.0%; oral agents: 78.5% vs. 64.3%), and hypertension (54.7% vs. 34.6%)

SAFETY and RISKS

- The risk of death associated with bariatric surgery is about 0.1%¹² and the overall likelihood of major complications is about 4%¹³
- According to a study from the Cleveland Clinic's Bariatric and Metabolic Institute, laparoscopic bariatric surgery has complication and mortality rates comparable to some of the safest and most commonly performed surgeries in the U.S. including gallbladder surgery, appendectomy and knee replacement¹⁴
- Clinical evidence shows risks of severe obesity outweigh risks of metabolic and bariatric surgery for many patients^{15,16}

IMPACT on MORTALITY

- Studies show bariatric surgery reduces a patient's risk of premature death by 30% or more¹⁷
 - Bariatric surgery is associated with significant improvement in long-term survival of over eight years in nearly 8,000 patients; mortality rate was 1.5% versus 2.1% for the general population (Surgical Endoscopy, 2015)¹⁸
 - Extended from eight to 14 years, surgery patients' mortality was 2.5% compared with a mortality rate for the general population of 3.1%
- Bariatric surgery helps to improve or resolve more than 40 obesity-related diseases and conditions including type 2 diabetes, heart disease, certain cancers, sleep apnea, high blood pressure, high cholesterol, sleep apnea and joint problems^{19,20}
 - 60% reduction in mortality from cancer, with the largest reductions in breast and colon cancers²¹
 - 56% reduction in mortality from coronary artery disease
 - 92% reduction in mortality from type 2 diabetes
- Among nearly 16,000 patients with severe obesity, all-cause mortality decreased by 40% for up to seven years after gastric bypass compared to those who did not have surgery (NEJM, 2007)²²
 - Deaths from any obesity-related disease decreased by 52%, and were significantly lower for diabetes (92%), coronary artery disease (59%), and cancer (60%)
- Findings from 2,010 patients in the Swedish Obese Subjects (SOS) study show bariatric surgery was associated with a nearly 30% long-term reduction in overall mortality over a 20-year period compared with usual care (Journal of Internal Medicine, 2012)²³

ECONOMICS of BARIATRIC SURGERY

- The average cost of bariatric surgery ranges between \$17,000 and \$26,000²⁴
- As a result of the reduction or elimination of obesity-related conditions and associated treatment-costs:
 - Estimates suggest third-party payers will recover bariatric surgery costs within two-to-four years²⁵
 - On average, healthcare costs for patients suffering from severe obesity are reduced by 29% within five years of bariatric surgery²⁶
- According to expert analysis, surgical treatment of severe obesity results in individual worker productivity gain of \$2,765 per year for U.S. employers²⁷

Estimate of Bariatric Surgery Numbers, 2011-2017

- Number of people in the U.S that had a bariatric procedure in 2016 represents only about 1% of the estimated 24 million adults who could qualify for the surgery

	2011	2012	2013	2014	2015	2016	2017
TOTAL	158,000	173,000	179,000	193,000	196,000	216,000	228,000
RYGB	36.7%	37.5%	34.2%	26.8%	23.1%	18.7%	59.3%
Band	35.4%	20.2%	14%	9.5%	5.7%	3.4%	17.8%
Sleeve	17.8%	33%	42.1%	51.7%	53.8%	58.1%	2.77%
BPD/DS	0.9%	1%	1%	0.4%	0.6%	0.6%	0.7%
Revisions	6%	6%	6%	11.5%	13.6%	13.9%	14.14%
Other	3.2%	2.3%	2.7%	0.1%	3.2%	2.6%	2.46%
Balloons					0.03%	2.7%	2.75%

ASMBS APPROVED PROCEDURES and DEVICES

Roux-en-Y Gastric Bypass

- Stomach reduced to size of walnut and then attached to middle of small intestine, bypassing a section of the small intestine (duodenum and jejunum) and limiting absorption of calories
- Risks include allergic reactions to medicines, blood clots in the legs, blood loss, breathing problems, heart attack or stroke during or after surgery and infection²⁹

Sleeve Gastrectomy

- Stomach divided and stapled vertically, removing more than 85%, creating tube or banana-shaped pouch restricting amount of food that can be consumed and absorbed by the body
- Risks include gastritis, heartburn, stomach ulcers; injury to the stomach; intestines, or other organs during surgery; leakage from the line where parts of the stomach have been stapled together; poor nutrition, scarring inside the belly that could lead to a future blockage in the bowel; and vomiting³⁰

Adjustable Gastric Banding

- Adjustable silicone band filled with saline wrapped around upper part of stomach, creating small pouch that restricts food intake
- Risks include the gastric band eroding through the stomach, the gastric band slipping partly out of place, gastritis, heartburn, stomach ulcers, infection in the port, injury to the stomach, intestines, or other organs during surgery, poor nutrition, and scarring inside the belly³¹

Duodenal Switch

- The majority of the most stretchable portion of the stomach is permanently removed and roughly two-thirds to three-fourths of the upper small intestines are bypassed

Bariatric Reoperative Procedures

- Though a relative low percentage of patients require a second bariatric surgery, evidence supports additional treatment for persistent obesity, co-morbid disease, and complications³²

Intragastric Balloon

- Saline-filled silicone balloons temporarily placed in the stomach, limiting amount of food one can eat

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