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MEDICAL POLICY – 7.01.516

Bariatric Surgery

BCBSA Ref. Policy: 7.01.47

Effective Date:	**Oct. 3, 2025***
Last Revised:	Jun. 10, 2025
Replaces:	7.01.47

*This policy has been revised. Click here to view the current policy.

RELATED MEDICAL POLICIES:

2.01.38	Transesophageal Endoscopic Therapies for Gastroesophageal Reflux Disease
7.01.522	Gastric Electrical Stimulation
7.01.523	Panniculectomy and Excision of Redundant Skin

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Introduction

Bariatrics is the branch of medicine dealing with the causes and treatment of obesity. Clinically severe obesity (also known as morbid obesity) is when a person is excessively overweight. Obesity itself is a health hazard as it impacts the heart, lungs, muscles, and bones of the body. In addition, obesity is a known risk factor to develop type 2 diabetes, heart disease and high blood pressure. Many individuals are able to lose weight by changing their diet and increasing their exercise. The challenge for most people is keeping off the weight they have lost. For some people surgery may be needed. Bariatric surgery is often referred to as weight loss surgery or obesity surgery. Surgical approaches to support long-term weight loss have been developed over the past 20 years. For some individuals surgery works very well, although even after surgery people may need to significantly change their eating habits. Surgery is not without risk, however. There are several different types of weight loss surgery that are done on the stomach, intestine, or both. They generally fall into two main categories: surgeries that restrict the amount of food that may be eaten, and surgeries that restrict the body's ability to absorb calories and nutrients. Not all plans cover obesity surgery. When plans have a benefit for obesity surgery, then this policy describes what information is needed by the health plan to determine if the surgery may be covered.

Note: The Introduction section is for your general knowledge and is not to be taken as policy coverage criteria. The rest of the policy uses specific words and concepts familiar to medical professionals. It is intended for providers. A provider can be a person, such as a doctor, nurse, psychologist, or dentist. A provider also can be a place where medical care is given, like a hospital, clinic, or lab. This policy informs them about when a service may be covered.

Policy Coverage Criteria

Note: Bariatric (weight loss) surgery should be performed by a surgeon with specialized training and experience in the bariatric surgery procedure used, and in an institution (facility or hospital) that includes a comprehensive bariatric surgery program. Any device used for bariatric surgery must be FDA approved for that purpose and used according to the labeled indications.

Indication	Coverage Criteria
Contract limitations	**Some health plan contracts do not have benefits to cover surgical treatment of morbid obesity, complications, or after-effects associated with weight loss surgery. Refer to member contract language for benefit determination on weight loss surgery.**
Covered bariatric (weight loss) surgeries	**The following bariatric (weight loss) surgery procedures may be considered medically necessary for the treatment of class III obesity*, class II obesity with one obesity related co-morbid condition, T2** diabetes with class I obesity in individuals who have failed weight loss by conservative measures:** • Biliopancreatic bypass (i.e., the Scopinaro procedure) with duodenal switch (open [43845] or laparoscopic [43659]) • Gastric bypass using a Roux-en-Y anastomosis (open or laparoscopic) (43644, 43645, 43846***) • Laparoscopic adjustable gastric banding (e.g., LAP-BAND, REALIZE) (43770) • Sleeve gastrectomy (43775)

Indication	Coverage Criteria
	***Note:** **Class III obesity is defined by the CDC as a BMI of 40 kg/m² or greater (see Related Information)** ****Note: T2DM-Type II diabetes mellitus (see Related Information)** *****Note:** CPT 43846 is for short limb (150 cm or less) Roux-en-Y gastroenterostomy. See **Investigational** Coverage Criteria for long-limb gastric bypass procedure (i.e., >150 cm)

Individual selection criteria for adults with class II or III obesity
(Must meet all 3 criteria)
	Bariatric (weight loss) surgery may be considered medically necessary for the treatment of class II or III obesity in adults who have failed weight loss by conservative measures when ALL of the following criteria are met:
	• Class III obesity (a body mass index (BMI) ≥ 40 kg/m^2 or ≥37.5 kg/m^2 for an Asian**** individual)
	OR
	• Class II obesity (a BMI of 35 kg/m^2 to 39.9 kg/m^2 or ≥32.5 kg/m^2 to 37.4 kg/m^2 for an Asian individual) with at least **ONE** of the following obesity related comorbid conditions:
	  ○ Established Coronary Heart Disease, such as:
	  ▪ History of angina pectoris (stable or unstable)
	  ▪ History of angioplasty
	  ▪ History of coronary artery surgery
	  ▪ History of myocardial infarction
	  ○ Other Atherosclerotic Disease, such as:
	  ▪ Abdominal aortic aneurysm
	  ▪ Hypertension that is uncontrolled or resistant to treatment (medically refractory) despite optimal medical management (attempted medical management must have included at least 2 medications of different classes).
	  ▪ Peripheral arterial disease
	  ▪ Symptomatic carotid artery disease
	  ○ Type 2 Diabetes, uncontrolled (individual has inadequate glycemic control [i.e., HbA1c** level is ≥ 7]), despite lifestyle changes and use of antidiabetic medications

Indication	Coverage Criteria
	○ Moderate to severe obstructive sleep apnea (OSA), as documented by a sleep study (polysomnography),*** that has failed**** an adequate trial of CPAP/BIPAP or oral appliance. *** Note:** HbA1c-Hemoglobin A1C ****Note:** OSA severity categories: normal: AHI < 5 events/h, mild: AHI 5 to ≤15 events/h, moderate: AHI 15 to ≤ 30 events/h, and severe: AHI > 30 events/h *****Note:** CPAP/BIPAP or oral appliance failure is defined as residual AHI≥15 or inability to tolerate CPAP/BIPAP ≥ 4hours per night for ≥ 5 nights per week **AND** • Participation in a physician administered weight reduction program lasting at least three continuous months (over a 90-day period of time) within the 12-month period before surgery is considered. ○ Evidence of active participation documented in the medical record includes: ▪ Weight ▪ Current dietary program (e.g., MediFast, OptiFast) ▪ Physical activity (e.g., exercise/work-out program) **OR** • Documentation of participation in a structured weight reduction program such as Weight Watchers or Jenny Craig is an acceptable alternative if done in conjunction with physician supervision **AND** • Mental health evaluation and clearance by a licensed mental health provider* to rule out any mental health disorders that would be a contraindication to bariatric surgery, rule out inability to provide informed consent, and rule out inability to comply with pre- and post-surgical requirements

Indication	Coverage Criteria
	***Note:** A summary letter from the requesting bariatric surgeon alone is not sufficient for this documentation. *****Note**: Asian population is defined by the Census Bureau as "having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam."
Individual selection criteria for adults with T2 diabetes and class I obesity	**Bariatric (weight loss) surgery may be considered medically necessary for the treatment of adults with T2 diabetes and class I obesity (a BMI ≥ 30 kg/m² to 34.9 kg/m² or ≥27.5 kg/m² to 32.4 kg/m²) who have failed weight loss by conservative measures when ALL of the following criteria are met** • Individual has inadequate glycemic control (i.e., HbA1c* level is ≥ 7) despite lifestyle changes and use of antidiabetic medications **AND** • Participation in a physician administered weight reduction program lasting at least three continuous months (over a 90-day period of time) within the 12-month period before surgery is considered (e.g., MediFast, OptiFast) **OR** • Documentation of participation in a structured weight reduction program such as Weight Watchers or Jenny Craig is an acceptable alternative if done in conjunction with physician supervision **AND** • Mental health evaluation and clearance by a licensed mental health provider to rule out any mental health disorders that would be a contraindication to bariatric surgery, rule out inability to provide informed consent, and rule out inability to comply with pre- and post-surgical requirements **Note:** A physician's summary letter alone is not sufficient documentation. ***Note**: HbA1c-Hemoglobin A1C

Indication	Coverage Criteria
Individual selection criteria for adolescents less than 18 years of age	**Bariatric (weight loss) surgery may be considered medically necessary for the treatment of class III obesity in adolescents who have failed weight loss by conservative measures when ALL of the following criteria are met:** • The health plan contract allows bariatric surgery for those younger than 18 years of age (refer to member contract language for benefit determination on treatment of obesity for adolescents) **AND** • The adolescent meets the same individual selection criteria as an adult with class II or III obesity noted above **AND** • The facility has experienced staff to support adolescents including psychosocial and informed consent issues for bariatric surgery **Note**: Devices used for laparoscopic adjustable gastric banding do not have FDA approval in the United States for individuals younger than age18 years.
Revision bariatric surgery to correct complications	**Revision bariatric (weight loss) surgery (such as replacement and/or removal of an adjustable gastric band or surgical repair or reversal) either as a separate procedure or combined with a conversion to a second covered bariatric surgical procedure may be considered medically necessary to address perioperative or late complications from the primary bariatric procedure including, but not limited to:** • Band erosion, slippage, leakage, herniation, intractable nausea/vomiting that cannot be corrected with manipulation or adjustment, or component malfunction that cannot be repaired • Non-absorption resulting in hypoglycemia or malnutrition • Obstruction • Staple-line failure (e.g., gastrogastric fistula) • Stricture

Indication	Coverage Criteria

	• Conversion of sleeve gastrectomy to Roux-en-Y for the treatment of symptomatic gastroesophageal reflux disease (GERD) meeting the following criteria:
	  ○ Reflux is documented by abnormal 24-hour pH monitoring or endoscopic findings of esophagitis performed after a sleeve gastrectomy, and
	  ○ Symptoms persist despite optimal medical therapy (i.e., 8 weeks of daily proton pump inhibitor [PPI] therapy)
	• Ulceration
	• Weight loss of 20% or more below ideal body weight
	AND
	• Coverage for bariatric surgery is available under the individual's current health benefit plan

Revision of failed procedure due to dilation of the gastric pouch	**Revision of a primary bariatric procedure that has failed due to dilation of the gastric pouch or dilation proximal to an adjustable gastric band (documented by upper gastrointestinal examination or endoscopy) is considered medically necessary if the initial procedure was successful in inducing weight loss prior to pouch dilation, and the individual has been compliant with a prescribed nutrition and exercise program.**
Reoperation bariatric surgery for inadequate weight loss	**Reoperation of a previous bariatric surgical procedure or conversion to another covered bariatric surgical procedure due to inadequate weight loss, in the absence of a major complication as noted above, may be considered medically necessary when ALL of the following criteria are met:** • Previous surgery for morbid obesity was at least 2 years prior to the repeat procedure **AND** • There is documentation of compliance with the previously prescribed postoperative nutrition and exercise program **AND** • Due to a failure of the original bariatric surgical procedure (such as unsuccessful band adjustments) the individual has failed to achieve adequate weight loss, defined as failure to lose at least 50% of excess body weight (EBW) or failure to

Indication	Coverage Criteria
	achieve at least 20% total weight loss (TWL). (See **Related Information** for how to calculate) **AND** • Coverage for bariatric surgery is available under the individual's current health benefit plan **In the absence of a major complication, individuals with weight loss failure greater than or equal to two years following a primary bariatric surgical procedure must meet the initial medical necessity criteria listed above for a second bariatric surgical procedure.** **Inadequate weight loss due to individual noncompliance with postoperative nutrition and exercise recommendations is considered not medically necessary as an indication for revision or conversion bariatric surgery.**
Cholecystectomy	**Routine cholecystectomy (gallbladder removal) may be considered medically necessary when performed at the time of bariatric surgery.**
Hiatal hernia repair	**Repair of a hiatal hernia at the time of bariatric surgery may be considered medically necessary for individuals who have a preoperative diagnosis of hiatal hernia with clinical indications for surgical repair.** **Repair of a hiatal hernia performed at the time of bariatric surgery in the absence of preoperative clinical indications for surgical repair is considered not medically necessary**
Routine liver biopsy	**Routine liver biopsy during obesity surgery is considered not medically necessary in the absence of preoperative signs or symptoms of liver disease (e.g., elevated liver enzymes, enlarged liver).**
Bariatric surgery for a BMI less than 35 kg/m^2	**Bariatric (weight loss) surgery is considered not medically necessary for individuals with a BMI less than 35 kg/m^2 who do not have T2 diabetes and for all individuals with a BMI < 30**

Indication	Coverage Criteria
	kg/m², except for individuals in the Asian population (see.above)
Bariatric type surgery to treat conditions other than morbid obesity	**Gastric bypass as a primary procedure using laparoscopic adjustable gastric banding, gastric bypass using a Roux-en-Y anastomosis, sleeve gastrectomy, or biliopancreatic bypass with duodenal switch for the treatment of gastroesophageal reflux disease (GERD), or gastroparesis in individuals not meeting the medical necessity criteria for obesity classifications noted above is considered investigational.**
Vertical-banded gastroplasty (43842)	**Vertical banded gastroplasty (VBG) (stomach stapling) is considered not medically necessary as a treatment for class III obesity due to high rates of complications, revisions, and reoperations.**

Indication	Investigational
Non-covered bariatric (weight loss) surgery procedures (These listed procedures may not have specific codes assigned and could be billed using any of the following unlisted procedure codes: 43659, 43999, 44238, or 44799)	**The following bariatric (weight loss) surgery procedures are considered investigational for the treatment of class III obesity:** • Biliopancreatic diversion or bypass without duodenal switch • Gastric bypass using a Billroth II type of anastomosis (mini-gastric bypass) • Laparoscopic gastric plication (aka laparoscopic greater curvature plication [LGCP]) (43843) • Long-limb gastric bypass procedure (i.e., >150 cm) (43847) • Single anastomosis duodenoileal bypass with sleeve gastrectomy (SADI-S) (aka single anastomosis duodenal switch or stomach intestinal pylorus sparing surgery [SIPS]) • Two-stage bariatric surgery procedures (e.g., sleeve gastrectomy as initial procedure followed by biliopancreatic diversion at a later time) • Vagus nerve blocking (e.g., the VBLOC device or Maestro) • Endoscopic procedures (aka endoluminal, endosurgical) as a primary bariatric procedure or as a revision procedure (i.e., to treat weight gain after bariatric surgery to remedy a large

Indication	Investigational
	gastric stoma or large gastric pouches) including, but not limited to, any of the following: ○ Endoscopic sleeve gastroplasty (ESG; Accordian procedure) (aka transoral gastroplasty, TOGA) ○ Insertion of the StomaphyX device or any other closure device (e.g., Apollo OverStitch, EndoCinch System) ○ Intragastric balloons (e.g., Orbera, ReShape, Obalon, Spatz3 (0813T), TransPyloric Shuttle [TPS]) ○ Natural orifice transluminal endoscopic surgery (NOTES) ○ Restorative obesity surgery, endoluminal (ROSE) ○ Stomach aspiration therapy (drainage tube device) (e.g., AspireAssist) ○ Transoral outlet reduction endoscopy (TORe procedure) ○ Use of an endoscopically placed duodenal-jejunal sleeve (aka gastrointestinal liners, endoscopic gastrointestinal bypass device) (e.g., EndoBarrier)

Documentation Requirements

The medical records submitted for review should document that medical necessity criteria are met. The record should include clinical documentation of ALL of the following criteria:

- A body mass index (BMI) that meets the policy criteria. (note that the BMI criteria is different for Asian individuals)
- Documentation of any comorbid conditions that may exist
  - Established coronary heart disease
  - Other atherosclerotic disease
  - Type 2 diabetes uncontrolled by medications
  - Obstructive sleep apnea, as documented by a sleep study, that that has failed* an adequate trial of CPAP/BIPAP or oral appliance.

OR

- T2 diabetes and class I obesity (a BMI ≥ 30 kg/m^2 to 34.9 kg/m2) and inadequate glycemic control despite optimal lifestyle and medical therapy (e.g., Hb A1C level is ≥ 7)

AND

- Completion of a physician administered weight-loss program that:
  - Lasted for at least three (3) months in a row (a 90-day period of time)

Documentation Requirements

- Took place within 12 months before the proposed weight loss surgery
- Demonstrates in the medical record that the member actively took part in the program, as well as include member's weight, the current dietary program (MediFast, OptiFast) and exercise/work-out program.

  OR

- Documents participation in a structured weight loss program such as Weight Watchers or Jenny Craig and that this program was supervised by the healthcare provider

- Mental health evaluation and clearance by a licensed mental health provider to rule out any mental health disorders that would be a contraindication to bariatric surgery, rule out inability to provide informed consent, and rule out inability to comply with presurgical and postsurgical requirements.

  Note: A letter by a healthcare provider is not enough to meet these criteria.

AND

- The requested bariatric surgical procedure is considered a medically necessary procedure for the age of the individual.

Coding

Code	Description
CPT	
0813T	Esophagogastroduodenoscopy, flexible, transoral, with volume adjustment of intragastric bariatric balloon (e.g., Spatz3)
43290	Esophagogastroduodenoscopy, flexible, transoral; with deployment of intragastric bariatric balloon
43291	Esophagogastroduodenoscopy, flexible, transoral; with removal of intragastric bariatric balloon(s)
43644	Laparoscopy, surgical, gastric restrictive procedure; with gastric bypass and Roux-en-Y gastroenterostomy (roux limb 150 cm or less)

Code	Description
43645	Laparoscopy, surgical, gastric restrictive procedure; with gastric bypass and small intestine reconstruction to limit absorption
43659	Unlisted laparoscopy procedure, stomach
43770	Laparoscopy, surgical, gastric restrictive procedure; placement of adjustable gastric restrictive device (eg, gastric band and subcutaneous port components)
43771	Laparoscopy, surgical, gastric restrictive procedure; revision of adjustable gastric restrictive device component only
43772	Laparoscopy, surgical, gastric restrictive procedure; removal of adjustable gastric restrictive device component only
43773	Laparoscopy, surgical, gastric restrictive procedure; removal and replacement of adjustable gastric restrictive device component only
43774	Laparoscopy, surgical, gastric restrictive procedure; removal of adjustable gastric restrictive device and subcutaneous port components
43775	Laparoscopy, surgical, gastric restrictive procedure; longitudinal gastrectomy (i.e., sleeve gastrectomy)
43842	Gastric restrictive procedure, without gastric bypass, for morbid obesity; vertical-banded gastroplasty
43843	Gastric restrictive procedure, without gastric bypass, for morbid obesity; other than vertical-banded gastroplasty
43845	Gastric restrictive procedure with partial gastrectomy, pylorus-preserving duodenoileostomy and ileoileostomy (50 to 100 cm common channel) to limit absorption (biliopancreatic diversion with duodenal switch)
43846	Gastric restrictive procedure, with gastric bypass for morbid obesity; with short limb (150 cm or less) Roux-en-Y gastroenterostomy
43847	Gastric restrictive procedure, with gastric bypass for morbid obesity; with small intestine reconstruction to limit absorption
43848	Revision, open, of gastric restrictive procedure for morbid obesity, other than adjustable gastric restrictive device (separate procedure)
43886	Gastric restrictive procedure, open; revision of subcutaneous port component only
43887	Gastric restrictive procedure, open; removal of subcutaneous port component only
43888	Gastric restrictive procedure, open; removal and replacement of subcutaneous port component only
43999	Unlisted procedure, stomach

Code	Description
44238	Unlisted laparoscopy procedure, intestine (except rectum)
44799	Unlisted procedure, small intestine
HCPCS	
C9784	Gastric restrictive procedure, endoscopic sleeve gastroplasty, with esophagogastroduodenoscopy and intraluminal tube insertion, if performed, including all system and tissue anchoring components
C9785	Endoscopic outlet reduction, gastric pouch application, with endoscopy and intraluminal tube insertion, if performed, including all system and tissue anchoring components

Note: CPT codes, descriptions and materials are copyrighted by the American Medical Association (AMA). HCPCS codes, descriptions and materials are copyrighted by Centers for Medicare Services (CMS).

Related Information

Definition of Terms

Body Mass Index Calculation

BMI is calculated by dividing an individual's weight (in kilograms) by height (in meters) squared.

- To convert pounds to kilograms, multiply pounds by 0.45
- To convert inches to meters, multiply inches by 0.0254
- Click **here** for BMI calculation for adults 20 and older
- Click **here** for BMI calculation for adolescents 19 and younger.

CDC Classification of Obesity

Per the Centers for Disease Control and Prevention (CDC), obesity is also frequently classified into the following categories:

- Class I: BMI of 30 to < 35 kg/m^2
- Class II: BMI of 35 to < 40 kg/m^2
- Class III: BMI of 40 kg/m^2 or higher (class III obesity is sometimes categorized as "severe" obesity).[1]

CDC T2 Diabetes Diagnosis Test Results Criteria

- Hemoglobin A1C (HbA1c) test-6.5 % or above, or
- Fasting blood sugar (FBS) test-126 mg/dl or above, or
- Glucose tolerance test-200 mg/dl or above

Calculation of Weight Loss

To calculate the percentage of **excess weight loss (EWL)**, use the following formula (based on weight in lbs to be at a healthy BMI of 25)

- 25 x (height in inches x height in inches/703) Example: 5'7" 25 x (67 x 67/703) = 159.6 lbs then pre-op weight – weight to be at a BMI of 25= Excess body weight

  Example: pre-op weight 320 lbs, height 5'7", 320-159.6 =160.4 lbs of excess body weight

  Percentage of excess body weight: number of lbs lost/excess body weight x 100= percent of excess body weight.

  Example: individual lost 120 lbs from 320 lbs and their current weight is 200 lbs

  120/160.4 x 100= 74% of excess body weight loss

To calculate the percentage of **total weight loss (TWL)** use the following formula

- (Pre-op weight-Current weight)/ (pre-op weight) x 100 = total weight loss

  Example from figures above: 320 lbs-200/320 x 100 = 37% total weight loss

Clinical obesity as defined by the Lancet Diabetes & Endocrinology Commission "is a condition of illness that, akin to the notion of chronic disease in other medical specialties, directly results from the effect of excess adiposity on the function of organs and tissues**".**

Source: **https://www.thelancet.com/commissions/clinical-obesity** Accessed February 10, 2025.

Recommendations specify that bariatric surgery may be considered in individuals with a body mass index (BMI) of ≥35 kg/m2 and 1 or more severe obesity-related complications, including type 2 diabetes, hypertension, obstructive sleep apnea, obesity-hypoventilation syndrome, Pickwickian syndrome, nonalcoholic fatty liver disease or nonalcoholic steatohepatitis, pseudotumor cerebri, GERD, asthma, venous stasis disease, severe urinary incontinence, debilitating arthritis, or considerably impaired quality of life.[1] Guidelines do not explicitly define thresholds for determining the clinical significance of obesity-related conditions that would qualify individuals for bariatric surgery, however.

Individual Selection Criteria

Class III obesity, formerly known as morbid obesity, is defined as a body mass index (BMI) ≥ 40 kg/m2 or a BMI of 35 kg/m2 or more with at least one clinically significant obesity-related disease such as diabetes, obstructive sleep apnea (OSA), coronary artery disease, or hypertension for which these complications or diseases are not controlled by best practice medical management. However, no evidence-based guidance has been identified that explicitly defines thresholds for determining the clinical significance of obesity-related disease that would qualify individuals for bariatric surgery.

Individuals should have documented failure to respond to conservative measures for weight reduction prior to consideration of bariatric surgery, and these attempts should be reviewed by the practitioner prior to seeking approval for the surgical procedure. As a result, some centers require active participation in a formal weight reduction program that includes frequent documentation of weight, dietary regimen, and exercise. However, there is a lack of evidence on the optimal timing, intensity, and duration of nonsurgical attempts at weight loss, and whether a medical weight loss program immediately preceding surgery improves outcomes.

Individuals with a BMI of 50 kg/m^2 or more need a bariatric procedure to achieve greater weight loss. Thus, the use of adjustable gastric banding, which results in less weight loss, should be most useful as a procedure for individuals with a BMI less than 50 kg/m^2. Malabsorptive

procedures, although they produce more dramatic weight loss, potentially result in nutritional complications, and the risks and benefits of these procedures must be carefully weighed in light of the treatment goals for each individual.

Individuals who undergo adjustable gastric banding and fail to achieve adequate weight loss must show evidence of postoperative compliance with diet and regular bariatric visits prior to consideration of a second bariatric procedure.

Recommendations specify that BMI thresholds for defining obesity do not apply uniformly across all populations. Clinical obesity in the Asian population is identified in individuals with a BMI≥ 25 kg/m^2. Many specialty societies and health organizations such as the WHO recognized that complications of obesity such as metabolic disease and diabetes occurs at lower BMI thresholds than the general population. Lower BMI thresholds are recommended in South Asian, Southeast Asian, and East Asian adult populations.

Considerations for Bariatric Surgery in Adolescents

Guidelines for bariatric surgery in adolescents are not uniform, with variability in weight-based criteria, ranging from a BMI of 35 kg/m^2 with comorbidities to a BMI of 50 kg/m^2. Most guidelines use weight-based criteria that parallel those for adults.

In addition to the weight-based criteria, there is greater emphasis on issues of developmental maturity, psychosocial status, and informed consent for adolescent individuals. All guidelines mention these issues, but recommendations are not uniform for addressing them (see **Guidelines for Children and Adolescents** under Practice Guidelines and Position Statements).

The choice of procedure in adolescents may also differ from adults, but there is a lack of consensus in guidelines or expert opinion as to the preferred procedure(s) for adolescents. The following factors should be considered in the choice of bariatric surgery in adolescents (Aikenhead A, Lobstein T, Knai C. Review of current guidelines on adolescent bariatric surgery. Clin Obes. Feb 2011;1(1):3-11. PMID 25586970):

- As in adults, laparoscopic gastric bypass is the most common procedure in adolescents.
- Devices used for laparoscopic adjustable gastric banding do not have FDA approval in the United States for individuals younger than age 18 years.

- Some guidelines for bariatric surgery in adolescents do not recommend biliopancreatic diversions because of the greater frequency of nutritional deficiencies on long-term follow-up, but other guidelines do not specify that biliopancreatic diversion not be done in adolescents.

Hiatal Hernia Repair Guidelines

In 2018, the American Society for Metabolic and Bariatric Surgery (ASMBS) and the American Hernia Society published a consensus guideline on bariatric surgery and hernia surgery (Menzo et al, 2018). The guideline contained the following conclusions and summary recommendations:

- "There is a significant link between obesity and hernia formation both after abdominal surgery and de novo. There is also evidence that abdominal wall hernia can more commonly present with obstruction or strangulation in individuals with obesity."
- "There is a higher risk for complications and recurrence after hernia repair in individuals with obesity."
- "In individuals with severe obesity and ventral hernia, and both being amenable to laparoscopic repair, combined hernia repair and metabolic/bariatric surgery may be safe and associated with good short-term outcomes and low risk of infection. There is a relative lack of evidence, however, about the use of synthetic mesh in this setting."
- "In individuals with severe obesity and abdominal wall hernia that is not amenable to laparoscopic repair, a staged approach is recommended. Weight loss prior to hernia repair is likely to improve hernia repair outcomes. Metabolic/bariatric surgery appears to provide far more significant and rapid weight loss than other modalities and would be a good option for selected individuals with severe obesity and large, symptomatic abdominal wall hernia."

The Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) issued evidence-based guidelines for the management of hiatal hernia (Kohn et al, 2013). The Society noted that the general methodologic quality of available studies is low. Recommendations for indications for repair are as follows:

- “Repair of a type I hernia [sliding hiatal hernias, where the gastroesophageal junction migrates above the diaphragm] in the absence of reflux disease is not necessary” (moderate quality evidence, strong recommendation).

- "All symptomatic paraesophageal hiatal hernias should be repaired [high-quality evidence, strong recommendation], particularly those with acute obstructive symptoms or which have undergone volvulus."
- "Routine elective repair of completely asymptomatic paraesophageal hernias may not always be indicated. Consideration for surgery should include the individual's age and co-morbidities" (moderate quality evidence, weak recommendation).

Esophagogastroduodenoscopy

Preoperative endoscopy with esophagogastroduodenoscopy (EGD) can identify asymptomatic anatomical abnormalities that might influence surgical planning. In 2021, the ASMBS issued a position statement on the rationale for performance of upper gastrointestinal endoscopy before and after bariatric surgery (Campos et al, 2021). The ASMBS recommended preoperative EGD only be performed on patients with symptoms before bariatric surgery. The position statement also noted that while some abnormalities found during EGD do not change medical or surgical management, routine preoperative EGD is justifiable at the surgeon's discretion. Recently, the American Gastroenterological Association (AGA) has published a practice update on performing high-quality upper endoscopy confirming an appropriate indication for EGD, ensuring adequate visualization with mucosal cleansing and insufflation, and using a high-definition white-light endoscopy system (Nagula et al, 2024). The AGA guidance also endorses careful gastric mucosal inspection in anterograde and retroflexed views and documenting abnormalities using established classifications and standard terminology, whenever possible.

Evidence Review

Description

Bariatric surgery is a treatment for obesity in individuals who fail to lose weight with conservative measures. There are numerous gastric and intestinal surgical techniques available. While these techniques have heterogeneous mechanisms of action, the result is a smaller gastric pouch that leads to restricted eating. However, these surgeries may lead to malabsorption of nutrients or eventually to metabolic changes.

Background

Bariatric Surgery

Bariatric surgery is performed to treat obesity and obesity-related comorbid conditions.

The first treatment of obesity is dietary and lifestyle changes. Although this strategy may be effective in some individuals, only a few individuals with obesity can reduce and control weight through diet and exercise. Most individuals find it difficult to comply with these lifestyle modifications on a long-term basis. When conservative measures fail, some individuals may consider surgical approaches.

Types of Bariatric Surgery Procedures

Open Gastric Bypass

The original gastric bypass surgeries were based on the observation that postgastrectomy individuals tended to lose weight. The current procedure (CPT 43846) involves both a restrictive and a malabsorptive component, with the horizontal or vertical partition of the stomach performed in association with a Roux-en-Y procedure (i.e., a gastrojejunal anastomosis). Thus, the flow of food bypasses the duodenum and proximal small bowel. The procedure may also be associated with an unpleasant "dumping syndrome," in which a large osmotic load delivered directly to the jejunum from the stomach produces abdominal pain and/or vomiting. The dumping syndrome may further reduce intake, particularly in "sweets eaters." Surgical complications include leakage and operative margin ulceration at the anastomotic site. Because the normal flow of food is disrupted, there are more metabolic complications than with other gastric restrictive procedures, including iron deficiency anemia, vitamin B12 deficiency, and hypocalcemia, all of which can be corrected by oral supplementation. Another concern is the ability to evaluate the "blind" bypassed portion of the stomach. Gastric bypass may be performed with either an open or laparoscopic technique.

Note: In 2005, the CPT code 43846 was revised to indicate that the short limb must be 150 cm or less, compared with the previous 100 cm. This change reflects the common practice in which the alimentary (i.e., jejunal limb) of a gastric bypass has been lengthened to 150 cm. This length also

serves to distinguish a standard gastric bypass with a very long, or very, very long gastric bypass, as discussed further here.

Laparoscopic Gastric Bypass

CPT code 43644 was introduced in 2005 and described the same procedure as open gastric bypass (CPT code 43846) but performed laparoscopically.

Laparoscopic Adjustable Gastric Banding

Adjustable gastric banding (CPT code 43770) involves placing a gastric band around the exterior of the stomach. The band is attached to a reservoir implanted subcutaneously in the rectus sheath. Injecting the reservoir with saline will alter the diameter of the gastric band; therefore, the rate-limiting stoma in the stomach can be progressively narrowed to induce greater weight loss, or expanded if complications develop. Because the stomach is not entered, the surgery and any revisions, if necessary, are relatively simple.

Complications include slippage of the external band or band erosion through the gastric wall. Adjustable gastric banding has been widely used in Europe. Two banding devices are approved by the US Food and Drug Administration (FDA) for marketing in the United States. The first to receive FDA approval was the LAP-BAND (original applicant, Allergan, BioEnterics, Carpinteria, CA; now Apollo Endosurgery, Austin, TX). The labeled indications for this device are as follows:

- The LAP-BAND system is indicated for use in weight reduction for severely obese individuals with a body mass index (BMI) of at least 40 or a BMI of at least 35 with one or more severe comorbid conditions, or those who are 100 lb or more over their estimated ideal weight according to the 1983 Metropolitan Life Insurance Tables (use the midpoint for medium frame). It is indicated for use only in severely obese adult individuals who have failed more conservative weight-reduction alternatives, such as supervised diet, exercise and behavior modification programs. Individuals who elect to have this surgery must make the commitment to accept significant changes in their eating habits for the rest of their lives.
- In 2011, the FDA-labelled indications for the LAP-BAND were expanded to include individuals with a BMI from 30 to 34 kg/m^2 with at least 1 obesity-related comorbid condition.

The second adjustable gastric banding device approved by the FDA through the premarket approval process is the REALIZE model (Ethicon Endo-Surgery, Cincinnati, OH). Labeled indications for this device are:

- The [REALIZE] device is indicated for weight reduction for morbidly obese individuals and is indicated for individuals with a Body Mass Index of at least 40 kg/m^2, or a BMI of at least 35 kg/m^2 with one or more comorbid conditions. The Band is indicated for use only in morbidly obese adult individuals who have failed more conservative weight-reduction alternatives, such as supervised diet, exercise, and behavior modification programs.

Open or Laparoscopic Sleeve Gastrectomy

A sleeve gastrectomy (CPT code 43775) is an alternative approach to gastrectomy that can be performed on its own or in combination with malabsorptive procedures (most commonly biliopancreatic diversion [BPD] with duodenal switch). In this procedure, the greater curvature of the stomach is resected from the angle of His to the distal antrum, resulting in a stomach remnant shaped like a tube or sleeve. The pyloric sphincter is preserved, resulting in a more physiologic transit of food from the stomach to the duodenum and avoiding the dumping syndrome (overly rapid transport of food through the stomach into intestines) seen with distal gastrectomy. This procedure is relatively simple to perform and can be done as an open or laparoscopic procedure. Some surgeons have proposed the sleeve gastrectomy as the first in a 2-stage procedure for very high-risk individuals. Weight loss following sleeve gastrectomy may improve an individual's overall medical status and, thus, reduce the risk of a subsequent more extensive malabsorptive procedure (e.g., biliopancreatic diversion).

Open or Laparoscopic Biliopancreatic Diversion

The biliopancreatic diversion procedure (BPD) (also known as the Scopinaro procedure; CPT code 43847) developed and used extensively in Italy, was designed to address drawbacks of the original intestinal bypass procedures that have been abandoned due to unacceptable metabolic complications. Many complications were thought to be related to bacterial overgrowth and toxin production in the blind, bypassed segment. In contrast, BPD consists of a subtotal gastrectomy and diversion of the biliopancreatic juices into the distal ileum by a long Roux-en-Y procedure. The procedure consists of the following components:

a. A distal gastrectomy induces a temporary early satiety and/or the dumping syndrome in the early postoperative period, both of which limit food intake.

b. A 200-cm long "alimentary tract" consists of 200 cm of ileum connecting the stomach to a common distal segment.

c. A 300- to 400-cm "biliary tract" connects the duodenum, jejunum, and remaining ileum to the common distal segment.

d. A 50- to 100-cm "common tract" is where food from the alimentary tract mixes with biliopancreatic juices from the biliary tract. Food digestion and absorption, particularly of fats and starches, are therefore limited to this small segment of bowel, creating selective malabsorption. The length of the common segment will influence the degree of malabsorption.

Because of the high incidence of cholelithiasis associated with the procedure, individuals typically undergo an associated cholecystectomy.

Many potential metabolic complications are related to BPD, including, most prominently, iron deficiency anemia, protein malnutrition, hypocalcemia, and bone demineralization. Protein malnutrition may require treatment with total parenteral nutrition. Also, several case reports have noted liver failure resulting in death or liver transplant.

Open or Laparoscopic Biliopancreatic Diversion With Duodenal Switch

CPT code 43845, which specifically identifies the duodenal switch procedure, was introduced in 2005. The duodenal switch procedure is a variant of the BPD previously described. In this procedure, instead of performing a distal gastrectomy, a sleeve gastrectomy is performed along the vertical axis of the stomach. This approach preserves the pylorus and initial segment of the duodenum, which is then anastomosed to a segment of the ileum, similar to the BPD, to create the alimentary limb. Preservation of the pyloric sphincter is intended to ameliorate the dumping syndrome and decrease the incidence of ulcers at the duodenoileal anastomosis by providing a more physiologic transfer of stomach contents to the duodenum. The sleeve gastrectomy also decreases the volume of the stomach and decreases the parietal cell mass. However, the basic principle of the procedure is similar to that of the BPD, i.e., producing selective malabsorption by limiting the food digestion and absorption to a short common ileal segment.

Vertical-Banded Gastroplasty

Vertical-banded gastroplasty (VBG; CPT code 43842) was formerly one of the most common gastric restrictive procedures performed in the United States but has now been replaced by other restrictive procedures due to high rates of revisions and reoperations. In this procedure, the stomach is segmented along its vertical axis. In order to create a durable reinforced and rate-limiting stoma at the distal end of the pouch, a plug of the stomach is removed, and a propylene collar is placed through this hole and then stapled to itself. Because the normal flow of food is preserved, metabolic complications are uncommon. Complications include esophageal reflux, dilation, or obstruction of the stoma, with the latter two requiring reoperation. Dilation of the stoma is a common reason for weight regain. Vertical-banded gastroplasty may be performed using an open or laparoscopic approach.

Vertical-banded gastroplasty (VBG) isa purely restrictive procedure that is largely not performed in the US and has been replaced by laparoscopic adjustable gastric banding (LAGB) or sleeve gastrectomy (SG). Weight loss with VBG is substantial, but there are high rates of revisions and reoperations due to staple line disruption, perforation, band erosion or disruption, and stenosis at the band site. Overall rates of revisions and reoperations at up to 10 years may be as high as 50% (Balsiger et al, 2000, PMID11307094; Miller et al, 2007, PMID17116427). Vertical-banded gastroplasty is not included on the list of endorsed procedures by the American Society for Metabolic and Bariatric Surgery. (**https://asmbs.org/resources/endorsed-procedures-and-devices** . Accessed January 8, 2025).

Long-Limb Gastric Bypass (i.e., >150 cm)

Variations of gastric bypass procedures have been described, consisting primarily of long-limb Roux-en-Y procedures (CPT code 43847), which vary in the length of the alimentary and common limbs. For example, the stomach may be divided with a long segment of the jejunum (instead of ileum) anastomosed to the proximal gastric stump, creating the alimentary limb. The remaining pancreaticobiliary limb, consisting of stomach remnant, duodenum, and length of proximal jejunum, is then anastomosed to the ileum, creating a common limb of variable length in which the ingested food mixes with the pancreaticobiliary juices. While the long alimentary limb permits absorption of most nutrients, the short common limb primarily limits absorption of fats. The stomach may be bypassed in a variety of ways (e.g., resection or stapling along the horizontal or vertical axis). Unlike the traditional gastric bypass, which is a gastric restrictive procedure, these very long-limb Roux-en-Y gastric bypasses combine gastric restriction with

some element of malabsorptive procedure, depending on the location of the anastomoses. Note that CPT code for gastric bypass (43846) explicitly describes a short limb (<150 cm) Roux-en-Y gastroenterostomy, and thus would not apply to long-limb gastric bypass.

Laparoscopic Malabsorptive Procedure

CPT code 43645 was introduced in 2005 to specifically describe a laparoscopic malabsorptive procedure. However, the code does not specifically describe any specific malabsorptive procedure.

Laparoscopic Gastric Plication

Laparoscopic gastric plication is a bariatric procedure that involves laparoscopic placement of sutures over the greater curvature (laparoscopic greater curvature plication) or anterior gastric region (laparoscopic anterior curvature plication) to create a tube-like stomach. To achieve gastric restriction the procedure requires 2 main steps, mobilization of the greater curvature of the stomach and suture plication of the stomach. CPT code 43843 Gastric restrictive procedure, without gastric bypass, for morbid obesity; other than vertical-banded gastroplasty is commonly used for this procedure.

Summary of Evidence

Adults With Class III Obesity

For individuals who are adults (18 years or older) with class III obesity (body mass index [BMI] ≥40kg/m2) who are treated with bariatric surgery using open or laparoscopic gastric bypass using a Roux-en-Y, laparoscopic adjustable gastric banding, open or laparoscopic sleeve gastrectomy, or open or laparoscopic biliopancreatic bypass/diversion (i.e., Scopinaro procedure) with duodenal switch, the evidence includes randomized controlled trials (RCTs), observational studies, and systematic reviews. Relevant outcomes are overall survival, change in disease status, functional outcomes, health status measures, quality of life, and treatment-related mortality and morbidity. Evidence from nonrandomized comparative studies, and meta-analyses of RCTs has consistently reported that bariatric surgery results in substantially greater weight loss than nonsurgical therapy. Data from the largest comparative study (the Swedish

Obese Subjects [SOS] study) found that bariatric surgery was associated with improvements in mortality, type 2 diabetes (T2D), cardiovascular risk factors, and quality of life. The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

Adults with Class II Obesity

For individuals who are adults (18 years or older) with class II obesity (BMI ≥35 to 39.9 kg/m2) who are treated with bariatric surgery using open or laparoscopic gastric bypass using a Roux-en-Y, laparoscopic adjustable gastric banding, open or laparoscopic sleeve gastrectomy, or open or laparoscopic biliopancreatic bypass/diversion (i.e., Scopinaro procedure) with duodenal switch, the evidence includes RCTs, observational studies, and systematic reviews. Relevant outcomes are overall survival, change in disease status, functional outcomes, health status measures, quality of life, and treatment-related mortality and morbidity. Evidence from nonrandomized comparative studies, and meta-analyses of RCTs has consistently reported that bariatric surgery results in substantially greater weight loss than nonsurgical therapy. Data from the largest comparative study (the SOS study) found that bariatric surgery was associated with improvements in mortality, T2D, cardiovascular risk factors, and quality of life. Additionally, bariatric surgery may greatly reduce the risk of cancer in individuals with obesity and diabetes.The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

Adults with Class 1 Obesity and Type 2 Diabetes

For individuals who have Class I obesity (BMI ≥30 to 34.9 kg/m2) and T2D with bariatric surgery using open or laparoscopic gastric bypass using a Roux-en-Y, laparoscopic adjustable gastric banding, open or laparoscopic sleeve gastrectomy, or open or laparoscopic biliopancreatic bypass/diversion (i.e., Scopinaro procedure) with duodenal switch, the evidence includes systematic reviews of RCTs and observational studies. Relevant outcomes are OS, change in disease status, functional outcomes, health status measures, quality of life, and treatment-related mortality and morbidity. Systematic reviews of RCTs and observational studies have found that certain types of bariatric surgery are more efficacious than medical therapy as a treatment for T2D in adults with obesity, including those with a BMI between 30 and 34.9 kg/m2. The greatest amount of evidence assesses gastric bypass, with some comparative studies

on laparoscopic adjustable gastric banding, laparoscopic sleeve gastrectomy, and biliopancreatic bypass/diversion. Systematic reviews have found significantly greater remission rates of diabetes, decrease in hemoglobin A1c (HbA1c) levels, and decrease in BMI with bariatric surgery than with nonsurgical treatment. The quality of evidence (GRADE) from both RCTs and observational studies for complete diabetes remission and BMI changes was consistently rated as low to very low across various follow-up periods. The efficacy of surgery is balanced against the short-term risks of the surgical procedure. Most RCTs in this population have one to five years of follow-up data.

Adults with a Body Mass Index <35 kg/m2 Who Do Not Have Type 2 Diabetes

For individuals with a BMI <35 kg/m2 who do not have T2D who receive bariatric surgery, the evidence includes systematic reviews of RCTs and observational studies. Relevant outcomes are OS, change in disease status, functional outcomes, health status measures, quality of life, and treatment-related mortality and morbidity. A few small RCTs and case series have reported a loss of weight and improvements in comorbidities for this population. However, the evidence does not permit conclusions on the long-term risk-benefit ratio of bariatric surgery in this population. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

Revision Bariatric Surgery

For individuals who are adults who receive revision bariatric surgery, the evidence includes systematic reviews, case series, and registry data. Relevant outcomes are OS, change in disease status, functional outcomes, health status measures, quality of life, and treatment-related mortality and morbidity. Systematic reviews and case series have shown that patients receiving revision bariatric surgery experienced satisfactory weight loss and reduced comorbidities including gastroesophageal reflux disease. Data from a multinational bariatric surgery database has found that corrective procedures following primary bariatric surgery are relatively uncommon but generally safe and efficacious. A large retrospective analysis found a serious complication rate of 7.2% for conversion to Roux-en-Y gastric bypass in 13,432 individuals and no difference in 30-day mortality compared to primary Roux-en-Y gastric bypass. The evidence

is sufficient to determine that the technology results in an improvement in the net health outcome.

Adolescents with Obesity

For individuals who are adolescent children with obesity who are treated with bariatric surgery using open or laparoscopic gastric bypass, laparoscopic adjustable gastric banding, or open or laparoscopic sleeve gastrectomy, the evidence includes RCTs, observational studies, and systematic reviews. Relevant outcomes are OS, change in disease status, functional outcomes, health status measures, quality of life, and treatment-related mortality and morbidity. Systematic reviews of studies on bariatric surgery in adolescents, who mainly received gastric bypass or laparoscopic adjustable gastric banding or sleeve gastrectomy, found significant weight loss and reductions in comorbidity outcomes with bariatric surgery. A single-center small RCT reported significant weight loss and metabolic improvements with laparoscopic adjustable gastric banding compared to conservative treatment. For bariatric surgery in the adolescent population, although data are limited on some procedures, studies have generally reported that weight loss and reduction in risk factors for adolescents are similar to that for adults. Most experts and clinical practice guidelines have recommended that bariatric surgery in adolescents be reserved for individuals with severe comorbidities, or for individuals with a BMI greater than 50 kg/m2. Also, greater consideration should be placed on the individual's developmental stage, on the psychosocial aspects of obesity and surgery, and on ensuring that the individual can provide fully informed consent. The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

Preadolescent Children with Obesity

For individuals who are preadolescent children with obesity who receive bariatric surgery, there are no studies focused solely on this population. Relevant outcomes are OS, change in disease status, functional outcomes, health status measures, quality of life, and treatment-related mortality and morbidity. No studies have been identified that specifically focus on bariatric surgery in preadolescent children. However, a recent prospective noncomparative cohort study has shown significant, long-term (follow-up of ten years) weight loss and resolution of comorbidities without safety concerns following laparoscopic sleeve gastrectomy (LSG) in children as young as five years old. Additionally, a recent analysis of surgical outcomes in

preteens versus teens, using data from the American College of Surgeons-Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program database, demonstrated that bariatric surgery in preteens is both safe and effective when performed at specialized centers. Nonetheless, further comparative studies are required to draw definitive conclusions about the net health benefits of bariatric surgery in preadolescent children with obesity. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

Hiatal Hernia Repair with Bariatric Surgery

For individuals with obesity and a preoperative diagnosis of a hiatal hernia who receive hiatal hernia repair with bariatric surgery, the evidence includes a systematic review, cohort studies and case series. Relevant outcomes are overall survival, change in disease status, functional outcomes, health status measures, quality of life, and treatment-related mortality and morbidity. A systematic review found that hiatal hernia repair during SG was superior to SG alone for GERD remission, but not de novo GERD. This combined approach of hernia repair during bariatric surgery has also been shown in a meta-analysis to significantly lower the risk of surgical site infections, reoperations, and seromas. Results from the cohort studies and case series have shown that, when a preoperative diagnosis of a hiatal hernia has been present, repairing the hiatal hernia during bariatric surgery resulted in fewer complications. However, the results are limited to individuals with a preoperative diagnosis. There was no evidence on the use of hiatal hernia repair when the hiatal hernia diagnosis is incidental. The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

Esophagogastroduodenoscopy with Bariatric Surgery

For Individuals with obesity undergoing bariatric surgery who receive esophagogastroduodenoscopy (EGD), the evidence includes systematic reviews of observational studies. Relevant outcomes are OS, change in disease status, functional outcomes, health status measures, quality of life, and treatment-related mortality and morbidity. Current research has focused on pre-operative utility of EGD. The evidence evaluating the scope of EGD in both intraoperative and postoperative settings is lacking in comparison. Systematic reviews have found that only one-fifth of patients had findings from EGD that either altered their operative management or postponed their bariatric surgery. There is a need for direct comparative

homogenous studies assessing whether EGD should be routine before bariatric surgery, and whether it is judicious to expose many patients to an invasive procedure that has potential risk and insufficient evidence of effectiveness. The evidence is insufficient to determine that the technology results in an improvement in the net health outcome.

Ongoing and Unpublished Clinical Trials

Some currently ongoing and unpublished trials that might influence this review are listed in **Table 1**.

Table 1. Summary of Key Trials

NCT No.	Trial Name	Planned Enrollment	Completion Date
Ongoing			
NCT06200961	Use of Sedation-Free Transnasal Endoscopy to Improve Access and Lower Costs of Endoscopic Evaluations in a Bariatric Medical and Surgical Program	100	Dec 2025
NCT02390973[a]	Surgery Versus Best Medical Management for the Long Term Remission of Type 2 Diabetes and Related Diseases (REMISSION)	408	Mar 2029
NCT02328599	A Prospective Consortium Evaluating the Long-term Follow-up of Patients With Type 2 Diabetes Enrolled In a Randomized Controlled Trial Comparing Bariatric Surgery Versus Medical Management (ARMMS-T2D)	302	Jun 2031
NCT03610256	Prospective Multicentric Randomized Trial Comparing the Efficacy and Safety of Single-anastomosis Duodeno Ileal Bypass With Sleeve Gastrectomy (SADI-S) Versus Roux-en-Y Gastric Bypass (RYGB) (SADISLEEVE)	382	Dec 2031
NCT03517072	Determinants of the Long-Term Success of Bariatric Surgery	1000	Jan 2024
NCT03472157	Prospective Multicentric, Open Label, Randomized Clinical Trial of Superiority, With Two Arms,	100	Mar 2026

NCT No.	Trial Name	Planned Enrollment	Completion Date
	Comparing Bariatric Surgery to the Recommended Medical Treatment for NASH (NASHSURG)		
NCT04506190	A Prospective Multicenter Study to Evaluate the Perioperative Outcomes of Laparoscopic and Robotic-Assisted Revisional Bariatric Surgery	100	Sep 2024
NCT04128995	Surgical or Medical Treatment for Pediatric Type 2 Diabetes	100	Dec 2025
NCT03236142	The Single, 300 cm Loop, Duodenal Switch (SIPS) Results in Less Nutritional Deficiencies Than the Standard Duodenal Switch (DS) Operation: A Multicenter, Randomized Controlled Trial	110	Jan 2025
NCT02692469	Laparoscopic Single Anastomosis Duodenal-Jejunal Bypass with Sleeve Gastrectomy vs Laparoscopic Duodenal Switch as a Primary Bariatric Procedure. 5 Year Patient Follow	140	Apr 2026
NCT04165694	Single Anastomosis Duodenal Ileal Bypass (SADI) as a Second Stage for Sleeve Gastrectomy Weight Loss Failure	54	Dec 2030
NCT01172899	The BASIC Trial. Morbid Obesity in Children and Adolescents: a Prospective Randomised Trial of Conservative Treatment Versus Surgery	60	Dec 2022 (unknown status)

NCT: national clinical trial.

[a] Denotes industry-sponsored or cosponsored trial.

Practice Guidelines and Position Statements

The purpose of the following information is to provide reference material. Inclusion does not imply endorsement or alignment with the policy conclusions.

Guidelines or position statements will be considered for inclusion if they were issued by, or jointly by, a US professional society, an international society with US representation, or National Institute for Health and Care Excellence (NICE). Priority will be given to guidelines that are informed by a systematic review, include strength of evidence ratings, and include a description of management of conflict of interest.

American Association of Clinical Endocrinologists and American College of Endocrinology

In 2016, the American Association of Clinical Endocrinologists (AACE) and the American College of Endocrinology (ACE) jointly published comprehensive clinical guidelines on the medical care of individuals with obesity.[1] The guidelines addressed 9 broad clinical questions with 123 recommendations. The recommendations specific to bariatric surgery are shown in Table 2. The guidelines noted that a de novo evidence-based review of questions pertaining to bariatric surgery was not undertaken. Instead, the 2013 guidelines from AACE, the Obesity Society, and the American Society for Metabolic & Bariatric Surgery were reviewed and determined to be adequate. Key recommendations from those guidelines were included in the 2016 document and are presented in **Table 2**.

Table 2. Recommendations on Bariatric Surgery Included in the American Association of Clinical Endocrinologists and the American College of Endocrinology Guidelines for Medical Care of Patients with Obesity (2016)

Key Question	Recommendation	Evidence Grade	Best Evidence Level
9.1 Is bariatric surgery effective to treat obesity and weight-related complications?	R120. Patients with a BMI of >40 kg/m2 without coexisting medical problems and for whom the procedure would not be associated with excessive risk should be eligible for bariatric surgery	A	1
9.2 When should bariatric surgery be used to treat obesity and weight-related complications?	R121. Patients with a BMI of ≥35 kg/m2 and 1 or more severe obesity-related complications, including T2D, hypertension, obstructive sleep apnea, obesity hypoventilation syndrome, Pickwickian syndrome, nonalcoholic fatty liver disease or		

Key Question	Recommendation	Evidence Grade	Best Evidence Level
	nonalcoholic steatohepatitis, pseudotumor cerebri, gastroesophageal reflux disease, asthma, venous stasis disease, severe urinary incontinence, debilitating arthritis, or considerably impaired QOL may also be considered for a bariatric surgery procedure. Patients with BMI of 30 to 34.9 kg/m2 with diabetes or metabolic syndrome may also be considered for a bariatric procedure, although current evidence is limited by the number of patients studied and lack of long-term data demonstrating net benefit.		
	BMI ≥35 kg/m2 and therapeutic target of weight control and improved biochemical markers of CVD risk	A	1
	BMI ≥30 kg/m2 and therapeutic target of weight control and improved biochemical markers of CVD risk	B	2
	BMI ≥30 kg/m2 and therapeutic target of glycemic control in T2DM and improved biochemical markers of CVD risk	C	3
	R122. Independent of BMI criteria, there is insufficient evidence to recommend a bariatric surgical procedure specifically for glycemic control, lipid lowering, or CVD risk reduction alone	D	NA
	R123. All patients should undergo pre-operative evaluation for weight-related complications and causes of obesity, with special attention directed to factors that may affect a	A	1

Key Question	Recommendation	Evidence Grade	Best Evidence Level
	recommendation for bariatric surgery or be ameliorated by weight loss resulting from the procedure		

BMI: body mass index; CVD: cardiovascular disease; NA: not applicable; QOL: quality of life; T2D: type 2 diabetes.

American Academy of Clinical Endocrinologists, ACE, the Obesity Society, the American Society for Metabolic and Bariatric Surgery, Obesity Medicine Association, and American Society of Anesthesiologists

In 2019, an update of the joint 2013 guidelines on support for bariatric surgery individuals were published by the AACE, the Obesity Society, the American Society for Metabolic and Bariatric Surgery (ASMBS), Obesity Medicine Association, and the American Society of Anesthesiologists.[127] Recommendations on the following questions are summarized below.

"Which patients should be offered bariatric surgery?"

- "Patients with a BMI≥40 kg/m^2 without coexisting medical problems and for whom bariatric surgery would not be associated with excessive risk should be eligible for a bariatric procedure."
- "Patients with a BMI≥35 kg/m^2 and 1 or more severe obesity-related complications remediable by weight loss, including T2D (type 2 diabetes), high risk for T2D, poorly controlled hypertension, nonalcoholic fatty liver disease/nonalcoholic steatohepatitis, OSA, osteoarthritis of the knee or hip, and urinary stress incontinence, should be considered for a bariatric procedure."
- "Patients with the following comorbidities and BMI≥35 kg/m^2 may also be considered for a bariatric procedure, though the strength of evidence is more variable; obesity-hypoventilation syndrome and Pickwickian syndrome after a careful evaluation of operative risk; idiopathic intracranial hypertension; GERD; severe venous stasis disease; impaired mobility due to obesity, and considerably impaired quality of life."
- "Patients with BMI of 30-34.9 kg/m^2 with T2D with inadequate glycemic control despite optimal lifestyle and medical therapy should be considered for a bariatric procedure; current

evidence is insufficient to support recommending a bariatric procedure in the absence of obesity."

- "The BMI criterion for bariatric procedures should be adjusted for ethnicity (e.g., 18.5 to 22.9 kg/m^2 is normal range, 23 to 24.9 kg/m^2 overweight, and ≥25 kg/m^2 obesity for Asians)." (See **Related Information**)
- "Bariatric procedures should be considered to achieve optimal outcomes regarding health and quality of life when the amount of weight loss needed to prevent or treat clinically significant obesity-related complications cannot be obtained using only structured lifestyle change with medical therapy."

"Which bariatric surgical procedure should be offered?"

- "Selecting a bariatric procedure should be based on individualized goals of therapy (e.g., weight loss target and/or improvement in specific obesity-related complications), available local-regional expertise (obesity specialists, bariatric surgeon, and institution), patient preferences, personalized risk stratification, and other nuances as they become apparent. Notwithstanding technical surgical reasons, laparoscopic bariatric procedures should be preferred over open bariatric procedures due to lower early postoperative morbidity and mortality. Laparoscopic adjustable gastric banding, sleeve gastrectomy, RYGB, and laparoscopic biliopancreatic diversion with duodenal switch (LBPD/DS), or related procedures should be considered as primary bariatric and metabolic procedures performed in patients requiring weight loss and/or amelioration of obesity-related complications. Physicians must exercise caution when recommending BPD, BPD with duodenal switch, or related procedures because of the greater associated nutritional risks related to the increased length of bypassed small intestine. Newer nonsurgical bariatric procedures may be considered for selected patients who are expected to benefit from short-term (i.e., about 6 months) intervention with ongoing and durable structured lifestyle with/without medical therapy."

American Society for Metabolic and Bariatric Surgery

In 2022, the ASMBS and the International Federation for the Surgery of Obesity and Metabolic Disorders (IFSO) published a joint statement on the current available scientific information on metabolic and bariatric surgery and its indications.[128] Since the NIH issued its statement on gastrointestinal surgery for severe obesity in 1991, there has been a significant expansion in the

understanding of obesity and metabolic and bariatric surgery (MBS).The authors note that a large body of clinical experience and research has emerged over the years, providing evidence of the safety, efficacy, and durability of MBS. Moreover, long-term studies have highlighted that MBS effectively treats clinically severe obesity and its associated co-morbidities, leading to a reduction in mortality rates when compared to non-operative treatment methods. Recommendations are summarized below.

- MBS is recommended for individuals with BMI ≥35 kg/ m^2, regardless of presence, absence, or severity of comorbidities.
- MBS is recommended in patients with T2D and BMI ≥30 kg/m^2.
- MBS should be considered in individuals with BMI of 30-34.9 kg/m^2 who do not achieve substantial or durable weight loss or co-morbidity improvement using nonsurgical methods.
- Obesity definitions using BMI thresholds do not apply similarly to all populations. Clinical obesity in the Asian population is recognized in individuals with BMI >25 kg/m^2 (see Related Information). Access to MBS should not be denied solely based on traditional BMI risk zones.
- There is no upper patient-age limit to MBS. Older individuals who could benefit from MBS should be considered for surgery after careful assessment of co-morbidities and frailty.
- Carefully selected individuals considered higher risk for general surgery may benefit from MBS.
- MBS is an effective treatment of clinically severe obesity in patients who need other specialty surgery, such as joint arthroplasty, abdominal wall hernia repair, or organ transplantation.
- Consultation with a multidisciplinary team can help manage the patient's modifiable risk factors with a goal of reducing risk of perioperative complications and improving outcomes. The ultimate decision for surgical readiness should be determined by the surgeon.
- Severe obesity is a chronic disease requiring long-term management after primary MBS. This may include revisional surgery or other adjuvant therapy to achieve desired treatment effect.

Individuals with Type 2 Diabetes Mellitus

In 2022, The American Association of Clinical Endocrinology (AACE) published updated guidelines for the comprehensive care of individuals with diabetes mellitus.[129] Recommendations related to bariatric procedures are shown in **Table 3**.

Table 3. Recommendations on Bariatric Surgery Included in the American Association of Clinical Endocrinology Guidelines on Care of Persons with Diabetes Mellitus (2022)

Recommendation Number	Recommendation	Evidence Grade	Best Evidence Level
10.9	Persons with a BMI ≥35 kg/m2 and 1 or more severe obesity-related complications remediable by weight loss, including T2D, high risk for T2D (insulin resistance, prediabetes, and/or metabolic syndrome), poorly controlled hypertension, NAFLD/NASH, OSA, osteoarthritis of the knee or hip, and urinary stress incontinence, should be considered for a bariatric procedure	C	3
10.10	Persons with BMI 30 to 34.9 kg/m2 and T2D with inadequate glycemic control despite optimal lifestyle and medical therapy should be considered for a bariatric procedure	B	2

BEL: best evidence level; BMI: body mass index; GOE: grade of evidence; NAFLD: nonalcoholic fatty liver disease; NASH: nonalcoholic steatohepatitis; OSA: obstructive sleep apnea; T2D: type 2 diabetes.

Veterans Affairs/Department of Defense

In 2020, the Department of Veterans Affairs/Department of Defense (VA/DoD) published a clinical practice guideline for the management of adult overweight and obesity.[130] Recommendations on bariatric surgery are shown in **Table 4**.

Table 4. Recommendations on Bariatric Surgery Included in VA/DoD Obesity Treatment Guidelines (2020)

Recommendation Number	Recommendation Statement	Strength of Evidence[1]
12	We suggest offering the option of metabolic/bariatric surgery, in conjunction with a comprehensive lifestyle intervention, to patients with a body mass index of ≥30 kg/m2 and type 2 diabetes mellitus.	Weak
13	We suggest offering the option of metabolic/bariatric surgery, in conjunction with a comprehensive lifestyle intervention, for long-term weight loss/maintenance and/or to improve obesity-associated condition(s) in adult patients with a body mass index ≥40 kg/m2 or those with body mass index ≥35 kg/m2 with obesity-associated condition(s).	Weak
14	There is insufficient evidence to recommend for or against metabolic/bariatric surgery to patients over age 65.	Neither for nor against
15	There is insufficient evidence to recommend for or against percutaneous gastrostomy devices for weight loss in patients with obesity.	Neither for nor against
16	We suggest offering intragastric balloons in conjunction with a comprehensive lifestyle intervention to patients with obesity (body mass index ≥30 kg/m2) who prioritize short-term (up to six months)weight loss.	Weak
17	There is insufficient evidence to recommend for or against intragastric balloons for long-term weight loss to support chronic weight management or maintenance.	Neither for nor against

[1]The relative strength of the recommendation is based on a binary scale, "Strong" or "Weak." A strong recommendation indicates that the Work Group is highly confident that desirable outcomes outweigh undesirable outcomes. If the Work Group is less confident of the balance between desirable and undesirable outcomes, they present a weak recommendation.

Society of American Gastrointestinal and Endoscopic Surgeons

In 2013, the Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) issued evidence-based guidelines on the management of hiatal hernia, which included a recommendation about the repair of hiatal hernias incidentally detected at the time of bariatric surgery.[121] These guidelines stated: "During operations for Roux-en-Y gastric bypass, sleeve gastrectomy and the placement of adjustable gastric bands, all detected hiatal hernias should be repaired" (moderate quality evidence, weak recommendation).

In 2024, the SAGES issues updated guidelines for the surgical treatment of hiatal hernias (HH).[131] Systematic reviews were conducted for four key questions regarding the treatment of HH in adults: surgical treatment of asymptomatic HH versus surveillance; use of mesh versus no mesh; performing a fundoplication versus no fundoplication; and RYGB versus redo fundoplication for recurrent HH. There was insufficient evidence to make evidence-based recommendations regarding surgical repair of asymptomatic HH or conversion to RYGB in recurrent HH, and therefore, only expert opinions were offered. The SAGES guidelines panel suggested that select asymptomatic patients may be offered surgical repair, with criteria outlined. Similarly, it suggested that conversion to RYGB for management of recurrent HH may be appropriate in certain patients and again described criteria. The evidence for the routine use of mesh in HH repair was equivocal and the panel deferred making a recommendation.

Guidelines for Children and Adolescents

Childerhose et al (2017) conducted a systematic review of adolescent bariatric surgery recommendation documents published in the United States and provided recommendations based on their review.[132] The literature search was conducted from 1999 through 2013 and identified 16 recommendations for inclusion: 10 clinical practice guidelines, 4 position statements, and 2 consensus statements. Fifteen of the 16 publications recommended bariatric surgery for adolescents. The main reasons for recommending bariatric surgery for adolescents included: (1) surgery is effective in producing short- and long-term weight loss; (2) surgery is appropriate when the patient does not respond to behavioral or medical interventions; (3) surgery is appropriate when serious comorbidities threaten the health of the patient; and (4) surgery can improve long-term health and/or emotional problems. Body mass index thresholds ranged from 35 kg/m^2 or more to 50 kg/m^2 or more, with lower thresholds usually requiring the presence of at least 1 serious comorbidity. The minimum age was specified in 10 publications,

with most using physiologic maturity (Tanner stage IV and/or 95% of adult height based on bone age, corresponding to ≥13 years for females and to ≥15 years for males) rather than years.

American Academy of Pediatrics

In 2019, the American Academy of Pediatrics (AAP) published a report outlining the current evidence regarding adolescent bariatric surgery that provided recommendations for practitioners and policy makers.[133] Within this report, AAP listed indications for adolescent metabolic and bariatric surgery that reflected 2018 ASMBS recommendations. Additionally, the AAP report noted that generally accepted contraindications to bariatric surgery included: "a medically correctable cause of obesity, untreated or poorly controlled substance abuse, concurrent or planned pregnancy, current eating disorder, or inability to adhere to postoperative recommendations and mandatory lifestyle changes."

In 2023, the AAP published their first evidence-based clinical practice guideline for the evaluation and treatment of children and adolescents (ages 2 to 18 years) with obesity.[134] The recommendations put forth in the guideline are based on evidence from RCTs and comparative effectiveness trials, along with high-quality longitudinal and epidemiologic studies gathered in a systematic review process described in their methodology. The AAP's recommendation related to bariatric surgery is below:

- "Pediatricians and other PHCPs [pediatric health care providers] should offer referral for adolescents 13 years and older with severe obesity (BMI ≥ 120% of the 95th percentile for age and sex) for evaluation for metabolic and bariatric surgery to local or regional comprehensive multidisciplinary pediatric metabolic and bariatric surgery centers (Grade C Evidence Quality)."

They list indications for adolescent metabolic and bariatric surgery (**Table 5**) that align with the 2019 indications.

Table 5. Indications for Adolescent Metabolic and Bariatric Surgery

Weight Criteria	Comorbid Conditions
Class 2 obesity; BMI ≥35, or 120% of the 95th percentile for age and sex, whichever is lower	Clinically significant disease, including, but not limited to, OSA (AHI >5), T2D, IIH, NASH, Blount disease, SCFE, , depressed health-related quality of life, and hypertension
Class 3 obesity; BMI ≥40, or 140% of the 95th percentile for age and sex, whichever is lower	Not required but commonly present

AHI: apnea-hypopnea index; BMI: body mass index; GERD: gastroesophageal reflux disease; IIH: idiopathic intracranial hypertension; NASH: non-alcoholic steatohepatitis; OSA: obstructive sleep apnea; SCFE: slipped capital femoral epiphysis; T2D: type 2 diabetes.

American Society for Metabolic and Bariatric Surgery

In 2012, the ASMBS best practice guidelines found that current evidence was insufficient to discriminate among specific bariatric procedures but allowed that there was an increasing body of data showing safety and efficacy of Roux-en-Y gastric bypass and adjustable gastric band for the pediatric population.[135] Bariatric surgery was recommended for pediatric patients with morbid obesity and the following comorbidities:

- Strong indications: T2D, moderate or severe obstructive sleep apnea (apnea-hypopnea index >15), nonalcoholic steatohepatitis, pseudotumor cerebri.
- Less strong indications: cardiovascular disease, metabolic syndrome.

The guidelines stated that depression and eating disorders should not be considered exclusion criteria for bariatric surgery. The guidelines also noted that depression should be monitored following the procedure and that eating disorders should be treated and the patient stabilized before the procedure.

In 2018, ASBMS published an update to the 2012 guideline.[136] Summary of major changes in the guideline included:

- "Vertical sleeve gastrectomy has become the most used and most recommended operation in adolescents with severe obesity for several reasons, near-equivalent weight loss to RYGB in adolescents, fewer reoperations, better iron absorption, and near-equivalent effect on

comorbidities as RYGB in adolescents. However, given the more extensive long-term data available for RYGB, we can recommend the use of either RYGB or VSG in adolescents. Long-term outcomes after vertical sleeve gastrectomy are still not well understood."

- "There are no data that the number of preoperative weight loss attempts correlated with success after metabolic/bariatric surgery. Compliance with a multidisciplinary preoperative program may improve outcomes after metabolic/bariatric surgery but prior attempts at weight loss should be removed as a barrier to definitive treatment for obesity."
- "The use of the most up to date definitions of childhood obesity are as follows: (1) BMI cut offs of 35 kg/m2 or 120% of the 95th percentile with a comorbidity, or (2) BMI >40 kg/m2 or 140% of the 95th percentile without a comorbidity (whichever is less). Requiring adolescents with a BMI >40 to have a comorbidity (as in the old guidelines) puts children at a significant disadvantage to attaining a healthy weight. Earlier surgical intervention (at a BMI <45 kg/m2) can allow adolescents to reach a normal weight and avoid lifelong medication therapy and end organ damage from comorbidities."
- "Certain comorbidities should be considered in adolescents, specifically the psychosocial burden of obesity, the orthopedic diseases specific to children, and cardiac risk factors. Given the poor outcomes of medical therapies for T2D in children, these comorbidities may be considered an indication for metabolic/bariatric surgery in younger adolescents or those with lower obesity percentiles."
- "Vitamin B deficiencies, especially B1 appear to be more common in adolescents both preoperatively and postoperatively; they should be screened for and treated. Prophylactic B1 for the first 6 months postoperatively is recommended as is education of patients and primary care providers on the signs and symptoms of common deficiencies."
- "Developmental delay, autism spectrum, or syndromic obesity should not be a contraindication to metabolic/bariatric surgery. Each patient and caregiver team will need to be assessed for the ability to make dietary and lifestyle changes required for surgery. Multidisciplinary teams should agree on the specific needs and abilities of the given patient and caregiver and these should be considered on a case-by-case basis with the assistance of the hospital ethics committee where appropriate."
- "Because metabolic/bariatric surgery results in better weight loss and resolution of comorbidities in adolescents at lower BMI's with fewer comorbidities, referrals should occur early, as soon as a child is recognized to suffer from severe obesity disease (BMI >120% of

the 95th percentile or BMI of 35). Prior weight loss attempts, Tanner stage, and bone age should not be considered when referring patients to a metabolic/bariatric surgery program."

- "Unstable family environments, eating disorders, mental illness, or prior trauma should not be considered contraindications for metabolic/bariatric surgery in adolescents; however, these should be optimized and treated where possible before and surrounding any surgical intervention for obesity."

In 2022, the ASMBS updated their guideline on indications for metabolic and bariatric surgery.[128] They noted that prospective data demonstrated durable weight loss and maintained co-morbidity remission in patients as young as 5 years of age. Additionally, the ASMBS stated that metabolic and bariatric surgery do not negatively impact pubertal development or linear growth, and therefore a specific Tanner stage and bone age should not be considered a requirement for surgery. Other statements supported 2018 recommendations, including that syndromic obesity, developmental delay, autism spectrum, or a history of trauma would not be considered a contraindication to bariatric surgery in children or adolescents.

The ASMBS's recommendation related to bariatric surgery in adolescents is below:

- "Children and adolescents with BMI. >120% of the 95th percentile and a major co-morbidity, or a BMI >140% of the 95th percentile, should be considered for MBS after evaluation by a multidisciplinary team in a specialty center."

Endocrine Society

In 2008, the Endocrine Society published recommendations on the prevention and treatment of pediatric obesity.[137] In 2017, the Society sponsored an update of these guidelines by the Pediatric Endocrine Society and the European Society of Endocrinology.[138] These guidelines recommended the following:

"We suggest that bariatric surgery be considered only under the following conditions:

- The child has attained Tanner 4 or 5 pubertal development and final or near-final adult height.
- The child has a BMI > 40 kg/m^2 or has BMI above 35 kg/m^2 and significant, extreme comorbidities.

- Extreme obesity and comorbidities persist, despite compliance with a formal program of lifestyle modification, with or without a trial of pharmacotherapy.
- Psychological evaluation confirms the stability and competence of the family unit.
- There is access to an experienced surgeon in a pediatric bariatric surgery center of excellence that provides the necessary infrastructure for patient care, including a team capable of long-term follow-up of the metabolic and psychosocial needs of the patient and family.
- The patient demonstrates the ability to adhere to the principles of healthy dietary and activity habits.

We recommend against bariatric surgery for preadolescent children, for pregnant or breast-feeding adolescents (and those planning to become pregnant within two yr of surgery) and in any patient who has not mastered the principles of healthy dietary and activity habits and/or has an unresolved substance abuse, eating disorder, or untreated psychiatric disorder."

Guidelines for Esophagogastroduodenoscopy

American Society for Metabolic and Bariatric Surgery

In 2021, the ASMBS issued a position statement addressing the need and strategies for preoperative endoscopic screening and postoperative surveillance for mucosal abnormalities in patients undergoing bariatric surgery, specifically for patients undergoing SG and RYGB.[126] The statement, based on current clinical knowledge and expert opinion, also notes that the general principles may apply to other procedures like BPD and BPD with DS, though there is paucity of procedure-specific literature. The ASMBS emphasizes that this statement does not establish a standard of care and will be updated as new evidence emerges. The ASMBS provided the following summary in **Table 6** below.

Table 6. Summary of ASMBS Recommendations for Upper Gastrointestinal Endoscopy

Upper Gastrointestinal Endoscopy Before Bariatric Surgery	Upper Gastrointestinal Endoscopy After Bariatric Surgery
Clinical evaluation by symptoms alone does not reliably diagnose or rule out GERD, and upper gastrointestinal abnormalities are found in a significant proportion of patients undergoing EGD before bariatric surgery, even in asymptomatic patients. While some of these findings do not modify medical or surgical management, routine preoperative EGD is justifiable and should be done at the surgeon's discretion.	After bariatric surgery, screening with EGD should be considered for all patients with gastrointestinal symptoms, including GERD symptoms. It is reasonable to perform EGD on patients ≥3 years after SG, irrespective of GERD symptoms, to rule out Barrett's esophagus. More long-term surveillance every 5 years after that would be reasonable even if the index screening EGD is normal and is compatible with clinicians exercising an abundance of caution until better-designed and longer-term studies are available.

EGD: Esophagogastroduodenoscopy; GERD: gastroesophageal reflux disease; SG: sleeve gastrectomy.

American Gastroenterological Association

In 2024, the American Gastroenterological Association published a practice update on performing high-quality upper endoscopy.[139] The best practice statements include confirming an appropriate indication for EGD, ensuring adequate visualization with mucosal cleansing and insufflation, and using a high-definition white-light endoscopy system. The guidance also endorses careful gastric mucosal inspection in anterograde and retroflexed views and documenting abnormalities using established classifications and standard terminology, whenever possible.

Medicare National Coverage

In 2006, the Centers for Medicare & Medicaid Services published a National Coverage Determination on bariatric surgery.[140] The Centers determined that:

"…the evidence is adequate to conclude that open and laparoscopic Roux-en-Y gastric bypass (RYGBP), laparoscopic adjustable gastric banding (LAGB), and open and laparoscopic biliopancreatic diversion with duodenal switch (BPD/DS), are reasonable and necessary for

Medicare beneficiaries who have a body mass index (BMI) >35 kg/m^2, have at least one co-morbidity related to obesity, and have been previously unsuccessful with medical treatment for obesity."

The decision memo also states, "The evidence is not adequate to conclude that the following bariatric surgery procedures are reasonable and necessary; therefore, the following are non-covered for all Medicare beneficiaries:

- Open vertical banded gastroplasty;
- Laparoscopic vertical banded gastroplasty;
- Open sleeve gastrectomy;
- Laparoscopic sleeve gastrectomy; and
- Open adjustable gastric banding."[140]

Regulatory Status

Forms of bariatric surgery performed without specific implantable devices are surgical procedures and, as such, are not subject to regulation by the FDA.

Table 7 shows forms of bariatric surgery with implantable devices approved by the FDA through the premarket approval process.

Table 7. FDA-Approved Bariatric Surgery Devices

Device	Manufacturer	PMA Date	Labeled Indications
Obalon intragastric balloon system	Obalon Therapeutics, Inc.	Sept 2016	For use in obese adults (BMI, 30 to 40 kg/m^2) who have failed weight reduction with diet and exercise and have no contraindications. Maximum placement time is 6 mo. Balloon is encased in a capsule. The capsule is swallowed and begins to dissolve after exposure to fluids in the stomach. After verification of capsule placement in the stomach, the balloon is filled with a gas mixture. Up to 3 balloons can be used during the 6 mo treatment period.

Device	Manufacturer	PMA Date	Labeled Indications
AspireAssist System	Aspire Bariatrics	Jun 2016	For long-term use in conjunction with lifestyle therapy and continuous medical monitoring in obese adults >22 yo, with a BMI of 35.0 to 55.0 kg/m^2 and no contraindications to the procedure who have failed to achieve and maintain weight loss with nonsurgical weight loss therapy
ORBERA intragastric balloon system	Apollo Endosurgery	Aug 2015	For use in obese adults (BMI, 30-40 kg/m^2) who have failed weight reduction with diet and exercise and have no contraindications. Maximum placement time is 6 mo. Balloon placed endoscopically and inflated with saline.
LAP-BAND Adjustable Gastric Banding System	Apollo Endosurgery (original applicant: Allergan)	Apr 2010	For use in weight reduction for severely obese adults with BMI of at least 40 kg/m^2 or a BMI of at least 30 kg/m^2 with ≥1 severe comorbid conditions who have failed more conservative weight-reduction alternatives (e.g., supervised diet, exercise, behavior modification programs).
REALIZE Adjustable Gastric Band	Ethicon Endosurgery	Nov 2007	For use in weight reduction for morbidly obese patients and for individuals with BMI of at least 40 kg/m^2, or a BMI of at least 35 kg/m^2 with ≥1 comorbid conditions, or those who are ≥45.4 kg over their estimated ideal weight. Indicated for use only in morbidly obese adults who have failed more conservative weight-reduction alternatives (e.g., supervised diet, exercise, behavior modification programs).

BMI: body mass index: FDA: US Food and Drug Administration; PMA: premarket approval.

In February 2017, the FDA issued a letter to health care providers discussing the potential risks with liquid-filled intragastric balloons in response to reports of two types of adverse events related to the balloons. Several dozen reports concerned spontaneous overinflation of the balloons, which caused pain, swelling, and vomiting. The second set of adverse event reports indicated that acute pancreatitis developed in several patients due to compression of gastrointestinal structures. These reports involved both ReShape (no longer marketed in the US) and ORBERA brands. The adverse events may require premature removal of the balloons.

In August 2017, the FDA issued a second letter to health care providers informing them of five unanticipated deaths occurring from 2016 through the time of the letter, due to intragastric balloons. The FDA recommended close monitoring of patients receiving these devices. In June 2018, the FDA reported that, since 2016, a total of 12 deaths occurred in patients with liquid-filled intragastric balloons worldwide; seven of these deaths were in patients in the US

In April 2020, the FDA provided an update on risks and continued to recommend that healthcare providers "instruct patients about the symptoms of life-threatening complications such as balloon deflation, gastrointestinal obstruction, and gastric and esophageal perforation and monitor patients closely during the entire duration of treatment for potential complications, including acute pancreatitis, spontaneous hyperinflation, and other potentially life-threatening complications."

Esophagogastroduodenoscopy

Esophagogastroduodenoscopy (EGD) is useful for detecting conditions that may contraindicate bariatric surgery, such as malignancies. It assists in planning the appropriate bariatric procedure by identifying other gastrointestinal conditions like large hiatus hernia and peptic ulcer, which could impact surgery. EGD also detects conditions needing preoperative treatment, such as Helicobacter pylori infection. Moreover, endoscopy provides an anatomical assessment of the distal stomach, which becomes inaccessible after specific bariatric procedures.

References

1. Garvey WT, Mechanick JI, Brett EM, et al. AMERICAN ASSOCIATION OF CLINICAL ENDOCRINOLOGISTS AND AMERICAN COLLEGE OF ENDOCRINOLOGY COMPREHENSIVE CLINICAL PRACTICE GUIDELINES FOR MEDICAL CARE OF PATIENTS WITH OBESITYEXECUTIVE SUMMARYComplete Guidelines available at https://www.aace.com/publications/guidelines. Endocr Pract. Jul 2016; 22(7): 842-84. PMID 27472012
2. Centers for Disease Control and Prevention. Overweight & Obesity. Last Reviewed: June 3, 2022; **https://www.cdc.gov/obesity/basics/adult-defining.html**. Accessed January 8, 2025.
3. Buchwald H, Avidor Y, Braunwald E, et al. Bariatric surgery: a systematic review and meta-analysis. JAMA. Oct 13 2004;292(14):1724-1737. PMID 15479938
4. Maggard MA, Shugarman LR, Suttorp M, et al. Meta-analysis: surgical treatment of obesity. Ann Intern Med. Apr 5 2005;142(7):547-559. PMID 15809466
5. Gomes-Rocha SR, Costa-Pinho AM, Pais-Neto CC, et al. Roux-en-Y Gastric Bypass Vs Sleeve Gastrectomy in Super Obesity: a Systematic Review and Meta-Analysis. Obes Surg. Jan 2022; 32(1): 170-185. PMID 34642872
6. Currie AC, Askari A, Fangueiro A, et al. Network Meta-Analysis of Metabolic Surgery Procedures for the Treatment of Obesity and Diabetes. Obes Surg. Oct 2021; 31(10): 4528-4541. PMID 34363144
7. Wilhelm SM, Young J, Kale-Pradhan PB. Effect of bariatric surgery on hypertension: a meta-analysis. Ann Pharmacother. Jun 2014;48(6):674-682. PMID 24662112

8. Ricci C, Gaeta M, Rausa E, et al. Early impact of bariatric surgery on type II diabetes, hypertension, and hyperlipidemia: a systematic review, meta-analysis and meta-regression on 6,587 patients. Obes Surg. Apr 2014;24(4):522-528. PMID 24214202

9. Cuspidi C, Rescaldani M, Tadic M, et al. Effects of bariatric surgery on cardiac structure and function: a systematic review and meta-analysis. Am J Hypertens. Feb 2014;27(2):146-156. PMID 24321879

10. Kwok CS, Pradhan A, Khan MA, et al. Bariatric surgery and its impact on cardiovascular disease and mortality: a systematic review and meta-analysis. Int J Cardiol. Apr 15 2014;173(1):20-28. PMID 24636546

11. Afshar S, Kelly SB, Seymour K, et al. The effects of bariatric surgery on colorectal cancer risk: systematic review and meta-analysis. Obes Surg. Oct 2014;24(10):1793-1799. PMID 25015708

12. Andersen JR, Aasprang A, Karlsen TI, et al. Health-related quality of life after bariatric surgery: a systematic review of prospective long-term studies. Surg Obes Relat Dis. Mar-Apr 2015; 11(2): 466-73. PMID 25820082

13. Arterburn DE, Olsen MK, Smith VA, et al. Association between bariatric surgery and long-term survival. JAMA. Jan 6 2015;313(1):62-70. PMID 25562267

14. Bower G, Toma T, Harling L, et al. Bariatric Surgery and Non-Alcoholic Fatty Liver Disease: a Systematic Review of Liver Biochemistry and Histology. Obes Surg. Dec 2015; 25(12): 2280-9. PMID 25917981

15. Cheung D, Switzer NJ, Ehmann D, et al. The impact of bariatric surgery on diabetic retinopathy: a systematic review and meta-analysis. Obes Surg. Sep 2015;25(9):1604-1609. PMID 25515499

16. Driscoll S, Gregory DM, Fardy JM, et al. Long-term health-related quality of life in bariatric surgery patients: A systematic review and meta-analysis. Obesity (Silver Spring). Jan 2016; 24(1): 60-70. PMID 26638116

17. Groen VA, van de Graaf VA, Scholtes VA, et al. Effects of bariatric surgery for knee complaints in (morbidly) obese adult patients: a systematic review. Obes Rev. Feb 2015;16(2):161-170. PMID 25487972

18. Hachem A, Brennan L. Quality of Life Outcomes of Bariatric Surgery: A Systematic Review. Obes Surg. Feb 2016; 26(2): 395-409. PMID 26494369

19. Lindekilde N, Gladstone BP, Lubeck M, et al. The impact of bariatric surgery on quality of life: a systematic review and meta-analysis. Obes Rev. Aug 2015; 16(8): 639-51. PMID 26094664

20. Lopes EC, Heineck I, Athaydes G, et al. Is Bariatric Surgery Effective in Reducing Comorbidities and Drug Costs? A Systematic Review and Meta-Analysis. Obes Surg. Sep 2015; 25(9): 1741-9. PMID 26112137

21. Ricci C, Gaeta M, Rausa E, et al. Long-term effects of bariatric surgery on type II diabetes, hypertension and hyperlipidemia: a meta-analysis and meta-regression study with 5-year follow-up. Obes Surg. Mar 2015;25(3):397-405. PMID 25240392

22. Yang XW, Li PZ, Zhu LY, et al. Effects of bariatric surgery on incidence of obesity-related cancers: a meta-analysis. Med Sci Monit. May 11 2015; 21: 1350-7. PMID 25961664

23. Madadi F, Jawad R, Mousati I, et al. Remission of Type 2 Diabetes and Sleeve Gastrectomy in Morbid Obesity: a Comparative Systematic Review and Meta-analysis. Obes Surg. Dec 2019; 29(12): 4066-4076. PMID 31655953

24. Yan G, Wang J, Zhang J, et al. Long-term outcomes of macrovascular diseases and metabolic indicators of bariatric surgery for severe obesity type 2 diabetes patients with a meta-analysis. PLoS One. 2019; 14(12): e0224828. PMID 31794559

25. Castellana M, Procino F, Biacchi E, et al. Roux-en-Y Gastric Bypass vs Sleeve Gastrectomy for Remission of Type 2 Diabetes. J Clin Endocrinol Metab. Mar 08 2021; 106(3): 922-933. PMID 33051679

26. Carmona MN, Santos-Sousa H, Lindeza L, et al. Comparative Effectiveness of Bariatric Surgeries in Patients with Type 2 Diabetes Mellitus and BMI ≥ 25 kg/m 2 : a Systematic Review and Network Meta-Analysis. Obes Surg. Dec 2021; 31(12): 5312-5321. PMID 34611827

27. Chen ZW, Jin T, Liang PP, et al. Incidence of cancer for patients after bariatric surgery: evidence from 33 cohort studies. Surg Obes Relat Dis. May 2024; 20(5): 467-481. PMID 38151417

28. Sjostrom L, Lindroos AK, Peltonen M, et al. Lifestyle, diabetes, and cardiovascular risk factors 10 years after bariatric surgery. N Engl J Med. Dec 23 2004;351(26):2683-2693. PMID 15616203

29. Sjöström L. Surgical intervention as a strategy for treatment of obesity. Endocrine. Oct 2000; 13(2): 213-30. PMID 11186223

30. Sjostrom CD, Lissner L, Wedel H, et al. Reduction in incidence of diabetes, hypertension and lipid disturbances after intentional weight loss induced by bariatric surgery: the SOS Intervention Study. Obes Res. Sep 1999;7(5):477-484. PMID 10509605

31. Sjostrom L, Narbro K, Sjostrom CD, et al. Effects of bariatric surgery on mortality in Swedish obese subjects. N Engl J Med. Aug 23 2007;357(8):741-752. PMID 17715408

32. Sjöholm K, Carlsson LMS, Svensson PA, et al. Association of Bariatric Surgery With Cancer Incidence in Patients With Obesity and Diabetes: Long-term Results From the Swedish Obese Subjects Study. Diabetes Care. Feb 01 2022; 45(2): 444-450. PMID 34799430

33. Courcoulas AP, Christian NJ, Belle SH, et al. Weight change and health outcomes at 3 years after bariatric surgery among individuals with severe obesity. JAMA. Dec 11 2013;310(22):2416-2425. PMID 24189773

34. Arterburn D, Wellman R, Emiliano A, et al. Comparative Effectiveness and Safety of Bariatric Procedures for Weight Loss: A PCORnet Cohort Study. Ann Intern Med. Dec 04 2018; 169(11): 741-750. PMID 30383139

35. Arterburn DE, Johnson E, Coleman KJ, et al. Weight Outcomes of Sleeve Gastrectomy and Gastric Bypass Compared to Nonsurgical Treatment. Ann Surg. Dec 01 2021; 274(6): e1269-e1276. PMID 32187033

36. Wadden TA, Chao AM, Bahnson JL, et al. End-of-Trial Health Outcomes in Look AHEAD Participants who Elected to have Bariatric Surgery. Obesity (Silver Spring). Apr 2019; 27(4): 581-590. PMID 30900413

37. Blue Cross Blue Shield Association Technology Evaluation Center (TEC). Laparoscopic adjustable gastric banding for morbid obesity. TEC Assessment. 2006;Vol 21:Tab 13. Nov 3, 2024.

38. Ibrahim AM, Thumma JR, Dimick JB. Reoperation and Medicare Expenditures After Laparoscopic Gastric Band Surgery. JAMA Surg. Sep 01 2017; 152(9): 835-842. PMID 28514487

39. Chakravarty PD, McLaughlin E, Whittaker D, et al. Comparison of laparoscopic adjustable gastric banding (LAGB) with other bariatric procedures; a systematic review of the randomised controlled trials. Surgeon. Jun 2012;10(3):172-182. PMID 22405735

40. Dixon JB, O'Brien PE, Playfair J, et al. Adjustable gastric banding and conventional therapy for type 2 diabetes: a randomized controlled trial. JAMA. Jan 23 2008;299(3):316-323. PMID 18212316

41. Gu L, Huang X, Li S, et al. A meta-analysis of the medium- and long-term effects of laparoscopic sleeve gastrectomy and laparoscopic Roux-en-Y gastric bypass. BMC Surg. Feb 12 2020; 20(1): 30. PMID 32050953

42. Han Y, Jia Y, Wang H, et al. Comparative analysis of weight loss and resolution of comorbidities between laparoscopic sleeve gastrectomy and Roux-en-Y gastric bypass: A systematic review and meta-analysis based on 18 studies. Int J Surg. Apr 2020; 76: 101-110. PMID 32151750

43. Sharples AJ, Mahawar K. Systematic Review and Meta-Analysis of Randomised Controlled Trials Comparing Long-Term Outcomes of Roux-En-Y Gastric Bypass and Sleeve Gastrectomy. Obes Surg. Feb 2020; 30(2): 664-672. PMID 31724116

44. Shenoy SS, Gilliam A, Mehanna A, et al. Laparoscopic Sleeve Gastrectomy Versus Laparoscopic Roux-en-Y Gastric Bypass in Elderly Bariatric Patients: Safety and Efficacy-a Systematic Review and Meta-analysis. Obes Surg. Nov 2020; 30(11): 4467-4473. PMID 32594469

45. Borgeraas H, Hofsø D, Hertel JK, et al. Comparison of the effect of Roux-en-Y gastric bypass and sleeve gastrectomy on remission of type 2 diabetes: A systematic review and meta-analysis of randomized controlled trials. Obes Rev. Jun 2020; 21(6): e13011. PMID 32162437

46. Zhao H, Jiao L. Comparative analysis for the effect of Roux-en-Y gastric bypass vs sleeve gastrectomy in patients with morbid obesity: Evidence from 11 randomized clinical trials (meta-analysis). Int J Surg. Dec 2019; 72: 216-223. PMID 31756544

47. Lee Y, Doumouras AG, Yu J, et al. Laparoscopic Sleeve Gastrectomy Versus Laparoscopic Roux-en-Y Gastric Bypass: A Systematic Review and Meta-analysis of Weight Loss, Comorbidities, and Biochemical Outcomes From Randomized Controlled Trials. Ann Surg. Jan 01 2021; 273(1): 66-74. PMID 31693504

48. Elsaigh M, Awan B, Shabana A, et al. Comparing Safety and Efficacy Outcomes of Gastric Bypass and Sleeve Gastrectomy in Patients With Type 2 Diabetes Mellitus: A Systematic Review and Meta-Analysis. Cureus. Jan 2024; 16(1): e52796. PMID 38389648

49. Zevallos A, Sanches EE, Parmar C, et al. Remission of hypertension after laparoscopic sleeve gastrectomy versus Roux-en-Y-gastric bypass: a systematic review of randomized control trials. Surg Obes Relat Dis. Oct 12 2024. PMID 39477737

50. Memon MA, Osland E, Yunus RM, et al. The effect of laparoscopic vertical sleeve gastrectomy and laparoscopic roux-en-Y gastric bypass on gastroesophageal reflux disease: An updated meta-analysis and systematic review of 5-year post-operative data from randomized controlled trials. Surg Endosc. Nov 2024; 38(11): 6254-6269. PMID 39384655

51. Xu C, Yan T, Liu H, et al. Comparative Safety and Effectiveness of Roux-en-Y Gastric Bypass and Sleeve Gastrectomy in Obese Elder Patients: a Systematic Review and Meta-analysis. Obes Surg. Sep 2020; 30(9): 3408-3416. PMID 32277330

52. Osland E, Yunus RM, Khan S, et al. Weight Loss Outcomes in Laparoscopic Vertical Sleeve Gastrectomy (LVSG) Versus Laparoscopic Roux-en-Y Gastric Bypass (LRYGB) Procedures: A Meta-Analysis and Systematic Review of Randomized Controlled Trials. Surg Laparosc Endosc Percutan Tech. Feb 2017; 27(1): 8-18. PMID 28145963

53. Osland EJ, Yunus RM, Khan S, et al. Five-Year Weight Loss Outcomes in Laparoscopic Vertical Sleeve Gastrectomy (LVSG) Versus Laparoscopic Roux-en-Y Gastric Bypass (LRYGB) Procedures: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. Surg Laparosc Endosc Percutan Tech. Dec 2020; 30(6): 542-553. PMID 32658120

54. Juodeikis Z, Brimas G. Long-term results after sleeve gastrectomy: A systematic review. Surg Obes Relat Dis. Apr 2017; 13(4): 693-699. PMID 27876332

55. Zhang Y, Wang J, Sun X, et al. Laparoscopic sleeve gastrectomy versus laparoscopic Roux-en-Y gastric bypass for morbid obesity and related comorbidities: a meta-analysis of 21 studies. Obes Surg. Jan 2015;25(1):19-26. PMID 25092167

56. Trastulli S, Desiderio J, Guarino S, et al. Laparoscopic sleeve gastrectomy compared with other bariatric surgical procedures: a systematic review of randomized trials. Surg Obes Relat Dis. Sep-Oct 2013;9(5):816-829. PMID 23993246

57. Brethauer SA, Hammel JP, Schauer PR. Systematic review of sleeve gastrectomy as staging and primary bariatric procedure. Surg Obes Relat Dis. Jul-Aug 2009;5(4):469-475. PMID 19632646

58. Hofsø D, Fatima F, Borgeraas H, et al. Gastric bypass versus sleeve gastrectomy in patients with type 2 diabetes (Oseberg): a single-centre, triple-blind, randomised controlled trial. Lancet Diabetes Endocrinol. Dec 2019; 7(12): 912-924. PMID 31678062

59. Peterli R, Wölnerhanssen BK, Peters T, et al. Effect of Laparoscopic Sleeve Gastrectomy vs Laparoscopic Roux-en-Y Gastric Bypass on Weight Loss in Patients With Morbid Obesity: The SM-BOSS Randomized Clinical Trial. JAMA. Jan 16 2018; 319(3): 255-265. PMID 29340679

60. Salminen P, Helmiö M, Ovaska J, et al. Effect of Laparoscopic Sleeve Gastrectomy vs Laparoscopic Roux-en-Y Gastric Bypass on Weight Loss at 5 Years Among Patients With Morbid Obesity: The SLEEVEPASS Randomized Clinical Trial. JAMA. Jan 16 2018; 319(3): 241-254. PMID 29340676

61. Wölnerhanssen BK, Peterli R, Hurme S, et al. Laparoscopic Roux-en-Y gastric bypass versus laparoscopic sleeve gastrectomy: 5-year outcomes of merged data from two randomized clinical trials (SLEEVEPASS and SM-BOSS). Br J Surg. Jan 27 2021; 108(1): 49-57. PMID 33640917

62. Helmio M, Victorzon M, Ovaska J, et al. SLEEVEPASS: a randomized prospective multicenter study comparing laparoscopic sleeve gastrectomy and gastric bypass in the treatment of morbid obesity: preliminary results. Surg Endosc. Sep 2012;26(9):2521-2526. PMID 22476829

63. Karamanakos SN, Vagenas K, Kalfarentzos F, et al. Weight loss, appetite suppression, and changes in fasting and postprandial ghrelin and peptide-YY levels after Roux-en-Y gastric bypass and sleeve gastrectomy: a prospective, double blind study. Ann Surg. Mar 2008;247(3):401-407. PMID 18376181

64. Himpens J, Dapri G, Cadiere GB. A prospective randomized study between laparoscopic gastric banding and laparoscopic isolated sleeve gastrectomy: results after 1 and 3 years. Obes Surg. Nov 2006;16(11):1450-1456. PMID 17132410

65. Farrell TM, Haggerty SP, Overby DW, et al. Clinical application of laparoscopic bariatric surgery: an evidence- based review. Surg Endosc. May 2009;23(5):930-949. PMID 19125308

66. Esparham A, Roohi S, Mehri A, et al. Roux-en-Y gastric bypass versus duodenal switch in patients with body mass index ≥50 kg/m 2 : a systematic review and meta-analysis. Surg Obes Relat Dis. Sep 16 2024. PMID 39395846

67. Salte OBK, Olbers T, Risstad H, et al. Ten-Year Outcomes Following Roux-en-Y Gastric Bypass vs Duodenal Switch for High Body Mass Index: A Randomized Clinical Trial. JAMA Netw Open. Jun 03 2024; 7(6): e2414340. PMID 38829616

68. Thomas SM, Costa V, Holubowich C, et al. Bariatric Surgery for Adults With Class I Obesity and Difficult-to-Manage Type 2 Diabetes: A Health Technology Assessment. Ont Health Technol Assess Ser. 2023; 23(8): 1-151. PMID 38130940

69. Yan Y, Sha Y, Yao G, et al. Roux-en-Y Gastric Bypass Versus Medical Treatment for Type 2 Diabetes Mellitus in Obese Patients: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. Medicine (Baltimore). Apr 2016; 95(17): e3462. PMID 27124041

70. Wu GZ, Cai B, Yu F, et al. Meta-analysis of bariatric surgery versus non-surgical treatment for type 2 diabetes mellitus. Oncotarget. Dec 27 2016; 7(52): 87511-87522. PMID 27626180

71. Cummings DE, Cohen RV. Bariatric/Metabolic Surgery to Treat Type 2 Diabetes in Patients With a BMI 35 kg/m2. Diabetes Care. Jun 2016; 39(6): 924-33. PMID 27222550

72. Cummings DE, Rubino F. Metabolic surgery for the treatment of type 2 diabetes in obese individuals. Diabetologia. Feb 2018; 61(2): 257-264. PMID 29224190

73. Muller-Stich BP, Senft JD, Warschkow R, et al. Surgical versus medical treatment of type 2 diabetes mellitus in nonseverely obese patients: a systematic review and meta-analysis. Ann Surg. Mar 2015;261(3):421-429. PMID 25405560

74. Rao WS, Shan CX, Zhang W, et al. A meta-analysis of short-term outcomes of patients with type 2 diabetes mellitus and BMI </= 35 kg/m2 undergoing Roux-en-Y gastric bypass. World J Surg. Jan 2015;39(1):223-230. PMID 25159119

75. Mingrone G, Panunzi S, De Gaetano A, et al. Bariatric-metabolic surgery versus conventional medical treatment in obese patients with type 2 diabetes: 5 year follow-up of an open-label, single-centre, randomised controlled trial. Lancet. Sep 05 2015; 386(9997): 964-73. PMID 26369473

76. Blue Cross Blue Shield Association Technology Evaluation Center (TEC). Bariatric Surgery In Patients With Diabetes And Body Mass Index Less Than 35 kg/m2 TEC Assessments. 2012;Volume 27:Tab 2. Nov 1, 2024.

77. Slater GH, Ren CJ, Siegel N, et al. Serum fat-soluble vitamin deficiency and abnormal calcium metabolism after malabsorptive bariatric surgery. J Gastrointest Surg. Jan 2004;8(1):48-55; discussion 54-45. PMID 14746835

78. Dolan K, Hatzifotis M, Newbury L, et al. A clinical and nutritional comparison of biliopancreatic diversion with and without duodenal switch. Ann Surg. Jul 2004;240(1):51-56. PMID 15213618

79. Blue Cross Blue Shield Association Technology Evaluation Center (TEC). TEC Special Report: The relationship between weight loss and changes in morbidity following bariatric surgery for morbid obesity. TEC Assessments. 2003;Vol 18:Tab 18. Nov 5, 2024.

80. Coffin B, Maunoury V, Pattou F, et al. Impact of Intragastric Balloon Before Laparoscopic Gastric Bypass on Patients with Super Obesity: a Randomized Multicenter Study. Obes Surg. Apr 2017; 27(4): 902-909. PMID 27664095

81. Cottam D, Qureshi FG, Mattar SG, et al. Laparoscopic sleeve gastrectomy as an initial weight-loss procedure for high-risk patients with morbid obesity. Surg Endosc. Jun 2006;20(6):859-863. PMID 16738970

82. Alexandrou A, Felekouras E, Giannopoulos A, et al. What is the actual fate of super-morbid-obese patients who undergo laparoscopic sleeve gastrectomy as the first step of a two-stage weight-reduction operative strategy? Obes Surg. Jul 26 2012;22(10):1623-1628. PMID 22833137

83. Silecchia G, Rizzello M, Casella G, et al. Two-stage laparoscopic biliopancreatic diversion with duodenal switch as treatment of high-risk super-obese patients: analysis of complications. Surg Endosc. May 2009;23(5):1032-1037. PMID 18814005

84. Li H, Wang J, Wang W, et al. Comparison Between Laparoscopic Sleeve Gastrectomy and Laparoscopic Greater Curvature Plication Treatments for Obesity: an Updated Systematic Review and Meta-Analysis. Obes Surg. Sep 2021; 31(9): 4142-4158. PMID 34227019

85. Sullivan S, Swain JM, Woodman G, et al. Randomized sham-controlled trial evaluating efficacy and safety of endoscopic gastric plication for primary obesity: The ESSENTIAL trial. Obesity (Silver Spring). Feb 2017; 25(2): 294-301. PMID 28000425

86. Esparham A, Roohi S, Ahmadyar S, et al. The Efficacy and Safety of Laparoscopic Single-Anastomosis Duodeno-ileostomy with Sleeve Gastrectomy (SADI-S) in Mid- and Long-Term Follow-Up: a Systematic Review. Obes Surg. Dec 2023; 33(12): 4070-4079. PMID 37880461

87. Axer S, Al-Tai S, Ihle C, et al. Perioperative Safety and 1-Year Outcomes of Single-Anastomosis Duodeno-Ileal Bypass (SADI) vs. Biliopancreatic Diversion with Duodenal Switch (BPD/DS): A Randomized Clinical Trial. Obes Surg. Sep 2024; 34(9): 3382-3389. PMID 39042310

88. Chen W, Feng J, Dong S, et al. Efficacy and safety of duodenal-jejunal bypass liner for obesity and type 2 diabetes: A systematic review and meta-analysis. Obes Rev. Nov 2024; 25(11): e13812. PMID 39191438

89. Rohde U, Hedback N, Gluud LL, et al. Effect of the EndoBarrier Gastrointestinal Liner on obesity and type 2 diabetes: a systematic review and meta-analysis. Diabetes Obes Metab. Mar 2016; 18(3): 300-5. PMID 26537317

90. Courcoulas A, Abu Dayyeh BK, Eaton L, et al. Intragastric balloon as an adjunct to lifestyle intervention: a randomized controlled trial. Int J Obes (Lond). Mar 2017; 41(3): 427-433. PMID 28017964

91. Genco A, Cipriano M, Bacci V, et al. BioEnterics Intragastric Balloon (BIB): a short-term, double-blind, randomised, controlled, crossover study on weight reduction in morbidly obese patients. Int J Obes (Lond). Jan 2006;30(1):129-133. PMID 16189503

92. Kotzampassi K, Grosomanidis V, Papakostas P, et al. 500 intragastric balloons: what happens 5 years thereafter? Obes Surg. Jun 2012;22(6):896-903. PMID 22287051

93. Saber AA, Shoar S, Almadani MW, et al. Efficacy of First-Time Intragastric Balloon in Weight Loss: a Systematic Review and Meta-analysis of Randomized Controlled Trials. Obes Surg. Feb 2017; 27(2): 277-287. PMID 27465936

94. Moura D, Oliveira J, De Moura EG, et al. Effectiveness of intragastric balloon for obesity: A systematic review and meta-analysis based on randomized control trials. Surg Obes Relat Dis. Feb 2016; 12(2): 420-9. PMID 26968503

95. Zheng Y, Wang M, He S, et al. Short-term effects of intragastric balloon in association with conservative therapy on weight loss: a meta-analysis. J Transl Med. Jul 29 2015; 13: 246. PMID 26219459

96. Kotinda APST, de Moura DTH, Ribeiro IB, et al. Efficacy of Intragastric Balloons for Weight Loss in Overweight and Obese Adults: a Systematic Review and Meta-analysis of Randomized Controlled Trials. Obes Surg. Jul 2020; 30(7): 2743-2753. PMID 32300945

97. Thompson CC, Abu Dayyeh BK, Kushner R, et al. Percutaneous Gastrostomy Device for the Treatment of Class II and Class III Obesity: Results of a Randomized Controlled Trial. Am J Gastroenterol. Mar 2017; 112(3): 447-457. PMID 27922026

98. Noren E, Forssell H. Aspiration therapy for obesity; a safe and effective treatment. BMC Obes. 2016; 3: 56. PMID 28035287

99. Ataya K, Al Jaafreh AM, El Bourji H, et al. Roux-en-Y Gastric Bypass Versus One Anastomosis Gastric Bypass as Revisional Surgery After Failed Sleeve Gastrectomy: A Systematic Review and Meta-analysis. J Metab Bariatr Surg. Dec 2023; 12(2): 57-66. PMID 38196783

100. Matar R, Monzer N, Jaruvongvanich V, et al. Indications and Outcomes of Conversion of Sleeve Gastrectomy to Roux-en-Y Gastric Bypass: a Systematic Review and a Meta-analysis. Obes Surg. Sep 2021; 31(9): 3936-3946. PMID 34218416

101. Parmar CD, Gan J, Stier C, et al. One Anastomosis/Mini Gastric Bypass (OAGB-MGB) as revisional bariatric surgery after failed primary adjustable gastric band (LAGB) and sleeve gastrectomy (SG): A systematic review of 1075 patients. Int J Surg. Sep 2020; 81: 32-38. PMID 32738545

102. Brethauer SA, Kothari S, Sudan R, et al. Systematic review on reoperative bariatric surgery: American Society for Metabolic and Bariatric Surgery Revision Task Force. Surg Obes Relat Dis. Sep-Oct 2014;10(5):952-972. PMID 24776071

103. Dang JT, Vaughan T, Mocanu V, et al. Conversion of Sleeve Gastrectomy to Roux-en-Y Gastric Bypass: Indications, Prevalence, and Safety. Obes Surg. May 2023; 33(5): 1486-1493. PMID 36922465

104. Petrucciani N, Martini F, Benois M, et al. Revisional One Anastomosis Gastric Bypass with a 150-cm Biliopancreatic Limb After Failure of Adjustable Gastric Banding: Mid-Term Outcomes and Comparison Between One- and Two-Stage Approaches. Obes Surg. Dec 2021; 31(12): 5330-5341. PMID 34609712

105. Sudan R, Nguyen NT, Hutter MM, et al. Morbidity, mortality, and weight loss outcomes after reoperative bariatric surgery in the USA. J Gastrointest Surg. Jan 2015;19(1):171-178; discussion 178-179. PMID 25186073

106. Catalano MF, Rudic G, Anderson AJ, et al. Weight gain after bariatric surgery as a result of a large gastric stoma: endotherapy with sodium morrhuate may prevent the need for surgical revision. Gastrointest Endosc. Aug 2007;66(2):240-245. PMID 17331511

107. Herron DM, Birkett DH, Thompson CC, et al. Gastric bypass pouch and stoma reduction using a transoral endoscopic anchor placement system: a feasibility study. Surg Endosc. Apr 2008;22(4):1093-1099. PMID 18027049

108. Thompson CC, Slattery J, Bundga ME, et al. Peroral endoscopic reduction of dilated gastrojejunal anastomosis after Roux-en-Y gastric bypass: a possible new option for patients with weight regain. Surg Endosc. Nov 2006;20(11):1744-1748. PMID 17024527

109. Eid GM, McCloskey CA, Eagleton JK, et al. StomaphyX vs a sham procedure for revisional surgery to reduce regained weight in Roux-en-Y gastric bypass patients: a randomized clinical trial. JAMA Surg. Apr 2014;149(4):372-379. PMID 24554030

110. Dakin GF, Eid G, Mikami D, et al. Endoluminal revision of gastric bypass for weight regain--a systematic review. Surg Obes Relat Dis. May-Jun 2013;9(3):335-342. PMID 23561960

111. Cohen RV, Oliveira da Costa MV, Charry L, et al. Endoscopic gastroplasty to treat medically uncontrolled obesity needs more quality data: A systematic review. Surg Obes Relat Dis. Jul 2019; 15(7): 1219-1224. PMID 31130406

112. Oei K, Johnston BC, Ball GDC, et al. Effectiveness of surgical interventions for managing obesity in children and adolescents: A systematic review and meta-analysis framed using minimal important difference estimates based on GRADE guidance to inform a clinical practice guideline. Pediatr Obes. Nov 2024; 19(11): e13119. PMID 39362833

113. Qi L, Guo Y, Liu CQ, et al. Effects of bariatric surgery on glycemic and lipid metabolism, surgical complication and quality of life in adolescents with obesity: a systematic review and meta-analysis. Surg Obes Relat Dis. Dec 2017; 13(12): 2037-2055. PMID 29079384

114. Black JA, White B, Viner RM, et al. Bariatric surgery for obese children and adolescents: a systematic review and meta-analysis. Obes Rev. Aug 2013;14(8):634-644. PMID 23577666

115. Treadwell JR, Sun F, Schoelles K. Systematic review and meta-analysis of bariatric surgery for pediatric obesity. Ann Surg. Nov 2008;248(5):763-776. PMID 18948803

116. Roebroek YGM, Paulus GF, Talib A, et al. Weight Loss and Glycemic Control After Bariatric Surgery in Adolescents With Severe Obesity: A Randomized Controlled Trial. J Adolesc Health. Mar 2024; 74(3): 597-604. PMID 38069930

117. Shah A, Liang NE, Bruzoni M, et al. Outcomes after metabolic and bariatric surgery in preteens versus teens using the Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program database and center-specific data. Obesity (Silver Spring). Jan 2024; 32(1): 150-155. PMID 37800184

118. Alqahtani AR, Elahmedi M, Abdurabu HY, et al. Ten-Year Outcomes of Children and Adolescents Who Underwent Sleeve Gastrectomy: Weight Loss, Comorbidity Resolution, Adverse Events, and Growth Velocity. J Am Coll Surg. Dec 2021; 233(6): 657-664. PMID 34563670

119. Greenstein RJ, Nissan A, Jaffin B. Esophageal anatomy and function in laparoscopic gastric restrictive bariatric surgery: implications for patient selection. Obes Surg. Apr 1998;8(2):199-206. PMID 9730394

120. Pilone V, Vitiello A, Hasani A, et al. Laparoscopic adjustable gastric banding outcomes in patients with gastroesophageal reflux disease or hiatal hernia. Obes Surg. Feb 2015;25(2):290-294. PMID 25030091

121. Kohn GP, Price RR, DeMeester SR, et al. Guidelines for the management of hiatal hernia. Surg Endosc. Dec 2013;27(12):4409-4428. PMID 24018762

122. Chen W, Feng J, Wang C, et al. Effect of Concomitant Laparoscopic Sleeve Gastrectomy and Hiatal Hernia Repair on Gastroesophageal Reflux Disease in Patients with Obesity: a Systematic Review and Meta-analysis. Obes Surg. Sep 2021; 31(9): 3905-3918. PMID 34254259

123. Malaussena Z, Mhaskar R, Richmond N, et al. Hernia repair in the bariatric patient: a systematic review and meta-analysis. Surg Obes Relat Dis. Feb 2024; 20(2): 184-201. PMID 37973424

124. Muir D, Choi B, Holden M, et al. Preoperative Oesophagogastroduodenoscopy and the Effect on Bariatric Surgery: a Systematic Review and Meta-Analysis. Obes Surg. Aug 2023; 33(8): 2546-2556. PMID 37314649

125. El Ansari W, El-Menyar A, Sathian B, et al. Is Routine Preoperative Esophagogastroduodenoscopy Prior to Bariatric Surgery Mandatory? Systematic Review and Meta-analysis of 10,685 Patients. Obes Surg. Aug 2020; 30(8): 3073-3083. PMID 32468339

126. Campos GM, Mazzini GS, Altieri MS, et al. ASMBS position statement on the rationale for performance of upper gastrointestinal endoscopy before and after metabolic and bariatric surgery. Surg Obes Relat Dis. May 2021; 17(5): 837-847. PMID 33875361

127. Mechanick JI, Apovian C, Brethauer S, et al. CLINICAL PRACTICE GUIDELINES FOR THE PERIOPERATIVE NUTRITION, METABOLIC, AND NONSURGICAL SUPPORT OF PATIENTS UNDERGOING BARIATRIC PROCEDURES - 2019 UPDATE: COSPONSORED BY AMERICAN ASSOCIATION OF CLINICAL ENDOCRINOLOGISTS/AMERICAN COLLEGE OF ENDOCRINOLOGY, THE OBESITY SOCIETY, AMERICAN SOCIETY FOR METABOLIC BARIATRIC SURGERY, OBESITY MEDICINE ASSOCIATION, AND AMERICAN SOCIETY OF ANESTHESIOLOGISTS - EXECUTIVE SUMMARY. Endocr Pract. Dec 2019; 25(12): 1346-1359. PMID 31682518

128. Eisenberg D, Shikora SA, Aarts E, et al. 2022 American Society for Metabolic and Bariatric Surgery (ASMBS) and International Federation for the Surgery of Obesity and Metabolic Disorders (IFSO): Indications for Metabolic and Bariatric Surgery. Surg Obes Relat Dis. Dec 2022; 18(12): 1345-1356. PMID 36280539

129. Blonde L, Umpierrez GE, Reddy SS, et al. American Association of Clinical Endocrinology Clinical Practice Guideline: Developing a Diabetes Mellitus Comprehensive Care Plan-2022 Update. Endocr Pract. Oct 2022; 28(10): 923-1049. PMID 35963508

130. Department of Veterans Affairs/Department of Defense. Clinical Practice Guidelines. Management of Adult Overweight and Obesity (OBE) (2020). **https://www.healthquality.va.gov/guidelines/CD/obesity/**. Accessed January 8, 2025.

131. Daly S, Kumar SS, Collings AT, et al. SAGES guidelines for the surgical treatment of hiatal hernias. Surg Endosc. Sep 2024; 38(9): 4765-4775. PMID 39080063

132. Childerhose JE, Alsamawi A, Mehta T, et al. Adolescent bariatric surgery: a systematic review of recommendation documents. Surg Obes Relat Dis. Oct 2017; 13(10): 1768-1779. PMID 28958402

133. Armstrong SC, Bolling CF, Michalsky MP, et al. Pediatric Metabolic and Bariatric Surgery: Evidence, Barriers, and Best Practices. Pediatrics. Dec 2019; 144(6). PMID 31656225

134. Hampl SE, Hassink SG, Skinner AC, et al. Clinical Practice Guideline for the Evaluation and Treatment of Children and Adolescents With Obesity. Pediatrics. Jan 09 2023. PMID 36622115

135. Michalsky M, Reichard K, Inge T, et al. ASMBS pediatric committee best practice guidelines. Surg Obes Relat Dis. Jan-Feb 2012;8(1):1-7. PMID 22030146

136. Pratt JSA, Browne A, Browne NT, et al. ASMBS pediatric metabolic and bariatric surgery guidelines, 2018. Surg Obes Relat Dis. Jul 2018; 14(7): 882-901. PMID 30077361

137. August GP, Caprio S, Fennoy I, et al. Prevention and treatment of pediatric obesity: an Endocrine Society clinical practice guideline based on expert opinion. J Clin Endocrinol Metab. Dec 2008;93(12):4576-4599. PMID 18782869

138. Styne DM, Arslanian SA, Connor EL, et al. Pediatric Obesity-Assessment, Treatment, and Prevention: An Endocrine Society Clinical Practice Guideline. J Clin Endocrinol Metab. Mar 01 2017; 102(3): 709-757. PMID 28359099

139. Nagula S, Parasa S, Laine L, et al. AGA Clinical Practice Update on High-Quality Upper Endoscopy: Expert Review. Clin Gastroenterol Hepatol. May 2024; 22(5): 933-943. PMID 38385942

140. Centers for Medicare and Medicaid Services (CMS). Decision Memo for Bariatric Surgery for the Treatment of Morbid Obesity (CAG-00250R). 2006; **https://www.cms.gov/medicare-coverage-database/details/nca-decision-memo.aspx?NCAId=160**. Accessed January 8, 2025.

141. Gloy VL, Briel M, Bhatt DL, et al. Bariatric surgery versus non-surgical treatment for obesity: a systematic review and meta-analysis of randomised controlled trials. BMJ. Oct 22 2013;347:f5934. PMID 24149519

142. Puzziferri N, Roshek TB, 3rd, Mayo HG, et al. Long-term follow-up after bariatric surgery: a systematic review. JAMA. Sep 3 2014;312(9):934-942. PMID 25182102

143. Colquitt JL, Pickett K, Loveman E, et al. Surgery for weight loss in adults. Cochrane Database Syst Rev. 2014;8:CD003641. PMID 25105982

144. Kang JH, Le QA. Effectiveness of bariatric surgical procedures: A systematic review and network meta-analysis of randomized controlled trials. Medicine (Baltimore). Nov 2017; 96(46): e8632. PMID 29145284

145. Park CH, Nam SJ, Choi HS, et al. Comparative Efficacy of Bariatric Surgery in the Treatment of Morbid Obesity and Diabetes Mellitus: a Systematic Review and Network Meta-Analysis. Obes Surg. Jul 2019; 29(7): 2180-2190. PMID 31037599

146. Cosentino C, Marchetti C, Monami M, et al. Efficacy and effects of bariatric surgery in the treatment of obesity: Network meta-analysis of randomized controlled trials. Nutr Metab Cardiovasc Dis. Sep 22 2021; 31(10): 2815-2824. PMID 34348877

History

Date	Comments
05/05/97	Add to Surgery Section - New Policy
09/21/00	Replace Policy - Policy updated to include expanded discussion of biliopancreatic bypass and gastric banding. Policy statement unchanged.
06/19/02	Replace Policy - Policy revised to include mini-gastric bypass.
04/09/02	Replace Policy - Policy revised to include further information on laparoscopic banding. Policy statement unchanged.
02/11/03	Replace Policy - Policy revised to include LAP-BAND Gastric Restrictive Procedure as medically necessary. Policy replaces CP.MP.BC.7.01.47.
10/16/03	Replace Policy - Policy revised; additional rationale language and references added.

Date	Comments
01/13/04	Replace Policy - Scheduled review; HCPC code updated.
02/10/04	Replace Policy - Policy reviewed; language clarification in description and policy guidelines.
09/01/04	Replace Policy - Policy renumbered from PR.7.01.116. No changes to dates.
01/11/05	Replace Policy - Scheduled review; policy statement revised to add medically necessary and investigative procedures. Rationale and references updated.
07/18/05	Replace Policy - Disclaimer added to Description section only. No other changes.
01/10/06	Replace Policy - Policy reviewed with literature search; policy statement unchanged. Title changed for clarification (old title: Surgery for Morbid Obesity).
03/29/06	Codes Updated - No other changes.
05/26/06	Codes Updated; Scope and Disclaimer Updated - No other changes.
06/30/06	Coded updated - No other changes.
10/10/06	Replace Policy - Policy updated with literature search; references added; policy statement expanded to indicate liver biopsy during morbid obesity surgery as not medically necessary.
11/14/06	Replace Policy - Clinical criteria regarding liver biopsy added to policy guidelines section; no other changes.
11/13/07	Replace Policy - Policy updated with literature search. Policy statement updated for clarification of conservative measures; to include Bariatric surgery in adolescents is considered investigational with criteria listed. Added "Reoperation" section with a note to see separate policy on surgery for abdominoplasty and panniculectomy skin. Policy description and guidelines were updated to support this change. References added.
01/15/08	Description Updated - To include "REALIZE Adjustable Gastric Band" as an FDA approved device. No other changes.
07/08/08	Replace Policy - Policy updated with literature search. Policy statement updated to include bariatric patients under the age of 18 is considered investigational. "Prophylactic Cholecystectomy" was also added as a not medically necessary indication. References added.
10/14/08	Replace Policy - Policy updated with literature search. Policy statement updated to add "Biliopancreatic bypass with duodenal switch (CPT 43845) is considered medically necessary in the treatment of morbid obesity that has not responded to conservative measures such as supervised diet, exercise and behavior modification programs" under the Malabsorptive Procedures heading. References added.
01/13/09	Replace Policy - Policy updated with literature search; no change to the policy statement. Policy guidelines updated.
06/09/09	Code Update - Code 44.99 added.
10/13/09	Cross Reference Update - No other changes.

Date	Comments
11/10/09	Replace Policy - Policy updated with literature search; no change to the policy statement. Rationale extensively updated on the sleeve gastrectomy procedure. Guidelines revised to eliminate the requirement of "at least once per month" medical visits during physician-supervised weight reduction program.
02/09/10	Code Update - New 2010 codes added.
05/11/10	Cross Reference Update - No other changes.
11/09/10	Replace Policy - Policy updated with literature search. Policy statement updated to clarify that member needs to meet selection criteria in Guidelines before being considered for a medically necessary procedure. Bariatric surgery is considered not medically necessary for those members not meeting selection criteria. Endoscopic procedures, previously only addressed for weight gain after bariatric surgery, are now also considered investigational as a primary procedure. Rationale updated and references added.
05/10/11	Replace Policy - Policy updated with literature search and references added. Sleeve gastrectomy, previously considered investigational, may now be considered medically necessary.
05/22/12	Replace policy. References added: 81- 83.No change in policy statements. Codes 44.38 and 44.39 added.
01/10/13	Coding update. CPT code 0155T removed from the policy; it was deleted effective 1/1/12.
03/15/13	Update title to Related Policy 7.01.523.
12/09/13	Policy extensively updated (now mirrors 7.01.47 which was not adopted). Title changed. Vertical banded gastroplasty previously considered medically necessary now considered not medically necessary. Added investigational policy statement for two stage procedures. Adolescent bariatric surgery previously considered investigational, now considered medically necessary. Prophylactic cholecystectomy policy statement removed. Codes updated; appendix removed.
05/08/14	Update Related Policies. Add 2.01.73.
12/08/14	Annual Review. Laparoscopic gastric plication was added to the list of investigational procedures and the policy statement on bariatric surgery in patients with BMI<35 changed from investigational to not medically necessary. Policy statements added related to the repair of preoperatively-diagnosed and incidentally identified hiatal hernias. Policy 7.01.73 added to Related Policies list. Indications for hiatal hernia repair added to the Policy Guidelines. Regulatory Status information added. References 13, 16-23, 29, 37-39, 69-78, 85, 87, 89, 93, 96, 101- 102, 104, 106-114, 116-118 added. ICD-9 and ICD-10 procedure codes removed from the policy; these are not utilized in adjudication of this policy.
04/20/15	Update Related Policies. Edit title to 8.01.502.
09/01/15	Update Related Policies. Add 7.01.150.

Date	Comments
11/10/15	Annual Review. Policy updated with literature search; no change to the policy statement. Reference added.
05/01/16	Annual Review, approved April 12, 2016. Single anastomosis duodenoileal bypass with sleeve gastrectomy (SADI-S) added to the list of investigational procedures. Added statement that bariatric surgery is considered investigational to treat patients that do not meet morbid obesity criteria for conditions that include but are not limited to diabetes and gastroesophageal reflux disease (GERD). Removed respiratory disturbance index (RDI) and "laboratory" sleep study (polysomnography) from sleep apnea criteria. Added related policy 2.01.503. Policy updated with a literature review; references added.
09/01/16	Interim Review, approved August 9, 2016. In the Policy Guidelines section clarified the statement that a decision for a sleep study in the home or facility setting, when indicated, is based on the criteria located in policy 2.01.503. Policy statements unchanged.
03/01/17	Annual Review, approved February 14, 2017. Policy moved into new format. Policy updated with literature search through November 2016. Rationale section consolidated into summary statements. Cholecystectomy as medically necessary added to policy statements, other policy statements unchanged.
12/01/17	Interim Review, approved November 9, 2017. Evidence Review section updated; reorganized. Practice Guidelines updated with AACE recommendations; Revision surgery language clarified. Reoperation surgery language added to indicate initial medical necessity criteria must be met again for weight loss failure not previously addressed. Clarified criteria language regarding physician supervised weight reduction requirements. Clarified language in defining signs/symptoms of liver disease. Added aspiration therapy device to investigational endoscopic procedures list. Added vagus nerve block to list of investigational procedures with link to separate policy. Added reference 130. Removed CPT code S2083.
01/30/18	Minor update, an example of an investigational gastric balloon (Orbera) was added to the policy.
05/01/18	Annual Review, approved April 18, 2018. Policy updated with literature review through December 2017; references 11, 36, 38, 47, 50, 62, 69-70, 73, 79, 112, 116, 119, and 139 added. Policy statements unchanged.
01/01/19	Interim Review, approved December 19, 2018. Minor clarifications were added to some policy statements Policy intent not changed.
05/01/19	Annual Review, approved April 9, 2019. Policy updated with literature review through January 2019. Several References added. Expanded medical necessity criteria for revision and reoperation bariatric surgical procedures.
04/01/20	Delete policy, approved March 10, 2020. This policy will be deleted effective July 2, 2020, and replaced with InterQual criteria for dates of service on or after July 2, 2020.
06/10/20	Interim Review, approved June 9, 2020, effective June 10, 2020. This policy is reinstated immediately and will no longer be deleted or replaced with InterQual criteria on July 2, 2020.

Date	Comments
09/01/20	Annual Review, approved August 4, 2020. Policy updated with literature review through November, 2019; references added. Policy statements unchanged.
05/01/21	Annual Review, approved April 13, 2021. Policy updated with literature review through December 17, 2020; references added. Policy criteria for physician administered weight loss program changed from six months participation to 3 months in the past 12 months; otherwise policy statements unchanged. Added CPT codes 0312T, 0313T, 0314T, 0315T, 0316T and 0317T. Update Related Policies, removed policy 7.01.150 as it was archived.
08/01/21	Interim Review, approved July 22, 2021.Modified language used and intent of mental health evaluation requirement.
10/01/21	Interim Review, approved September 2, 2021. Clarified OSA as a comorbidity under patient selection of BMI of 35 kg/m² is for those whose OSA is uncontrolled by medical management (e.g., CPAP or oral appliance).
05/01/22	Annual Review, approved April 25, 2022. Policy updated with literature review through December 16, 2021; references added. Minor edits and formatting changes for clarity; otherwise policy statements unchanged and intent unchanged.
08/01/22	Interim Review, approved July 12, 2022. Clarified obstructive sleep apnea comorbidity criteria by adding definition of CPAP and oral appliance failure. Added transoral outlet reduction, endoscopic (TORe) procedure and restorative obesity surgery, endoluminal (ROSE) procedure to list of endoscopic procedures that are considered investigational.
11/01/22	Interim Review, approved October 10, 2022. Minor edits and formatting changes for greater clarity only. Policy statements unchanged. Policy intent unchanged. Changed the wording from "patient" to "individual" throughout the policy for standardization.
11/18/22	Minor update. Added the term BIPAP where CPAP is noted in the policy criteria statements.
01/01/23	Coding update. Removed CPT codes 0312T, 0313T, 0314T, 0315T, 0316T, and 0317T from the policy statement section as the codes are termed effective 01/01/23. Added term date to CPT codes 0312T, 0313T, 0314T, 0315T, 0316T, and 0317T in the coding section. Added new CPT codes 43290 and 43291. Added unlisted code details to the Non-covered bariatric (weight loss) surgery procedures section. Added unlisted CPT codes 43659, 43999. 44238, and 44799 to the coding table.
05/01/23	Annual Review, approved April 11, 2023. Policy updated with literature review through January 3, 2023; references added. Added, medically necessary policy statement for individuals who are T2 diabetic and have class I obesity. Additional minor editorial refinements made to policy statements with intent unchanged. Several guidelines updated and added.
07/01/23	Coding update. Added new HCPCS codes C9784 and C9785.
08/01/23	Interim Review, approved July 11, 2023. Added medically necessary indication of treatment of symptomatic gastroesophageal reflux disease (GERD) under revision surgery when criteria are

Date	Comments
	met. Added examples of intragastric balloons (Spatz3, TransPyloric Shuttle) considered investigational; other minor edits made for clarity; policy intent unchanged.
01/01/24	Interim Review, approved December 26, 2023. Modified obesity related comorbid conditions of hypertension and type II diabetes listed under Class II obesity criteria for greater clarity. Added new CPT code 0813T.
07/01/24	Annual Review, approved June 24, 2024. Policy updated with literature review through March 7, 2024; references added.. Policy statements revised to align with current obesity classification terminology. Minor editorial refinements made to policy statements for clarity only; otherwise policy statements unchanged.
07/01/25	Annual Review, approved June 10, 2025. Policy updated with literature review through November 11, 2024. The following policy changes are effective October 3, 2025, following 90-day provider notification. Added the obesity BMI threshold for the Asian population as a medically necessary selection criterion for bariatric surgery. Clarified some statements under Revision to correct complications and Reoperation for inadequate weight loss for greater understanding. Added policy criterion under Reoperation for inadequate weight loss "Due to failure of the original bariatric surgical procedure (such as unsuccessful band adjustments) the individual has failed to achieve adequate weight loss defined as failure to lose at least 50% of excess body weight or failure to achieve at least 20% total weight loss" as one of the medically necessary criteria. Reorganized the other policy criteria bullets in this section as well for greater clarity.

Scope: Medical policies are systematically developed guidelines that serve as a resource for Company staff when determining coverage for specific medical procedures, drugs or devices. Coverage for medical services is subject to the limits and conditions of the member benefit plan. Members and their providers should consult the member benefit booklet or contact a customer service representative to determine whether there are any benefit limitations applicable to this service or supply. This medical policy does not apply to Medicare Advantage.