Bariatric Surgery (Adults)

Disclaimer

Clinical guidelines are developed and adopted to establish evidence-based clinical criteria for utilization management decisions. Oscar may delegate utilization management decisions of certain services to third-party delegates, who may develop and adopt their own clinical criteria.

The clinical guidelines are applicable to all commercial plans. Services are subject to the terms, conditions, limitations of a member's plan contracts, state laws, and federal laws. Please reference the member's plan contracts (e.g., Certificate/Evidence of Coverage, Summary/Schedule of Benefits) or contact Oscar at 855-672-2755 to confirm coverage and benefit conditions.

Summary

Morbid (clinically severe) obesity is a condition in which body fat accumulates to a level that can cause or inhibit the treatment of life-threatening medical comorbidities. Initial treatment steps include a regimented plan of diet and lifestyle changes, often designed and supervised by a team of healthcare professionals. Morbidly obese patients who have failed traditional treatment methods and are being treated for associated high-risk conditions including diabetes, hypertension, or obstructive sleep apnea, may be candidates for bariatric surgery. Bariatric surgery procedures attempt to reduce fat tissue accumulation through restrictive or malabsorptive approaches and can often be performed as open or laparoscopic surgery. Restrictive surgeries function by decreasing the effective size of the stomach, creating a sensation of early satiety and preventing the patient from intaking large meals. Malabsorptive procedures function by rearranging the flow of food through the digestive system to decrease overall digestion/absorption of calories. Some procedures combine restrictive and malabsorptive approaches. Additionally, a comprehensive post-operative plan of diet, exercise, and behavioral modification is critical in achieving durable weight loss outcomes, where success is defined as reduction in excess body weight by 50% and returning to within 30% of a patient's ideal body weight. Treatment plans and surgical options differ for adults and adolescents [see CG009: Bariatric Surgery (Adolescents)]. Bariatric surgery always requires prior authorization.

Definitions

"Body Mass Index (BMI)" relates body weight to height, defined as body mass divided by body height squared in units of kg/m² and is used to risk-stratify members.

"Class I Obesity" is defined as a BMI of 30 - 34.9.

"Class II Obesity" is defined as a BMI 35 - 39.9.

"Class III Obesity" is defined as a BMI \geq 40.

"Bariatric" is a term referring to the treatment of obesity.

"Open Surgery" refers to a procedure where a large incision allows for direct visualization and access to intra-abdominal organs.

"Laparoscopic Surgery" or minimally invasive surgery refers to a procedure often consisting of multiple small incisions allowing the use a small camera (laparoscope) and several thin instruments.

"Bariatric Surgery" is surgery on the stomach and/or intestines to assist with weight loss in patients with severe or extreme obesity (Classes II and III). Bariatric surgery can be done via restrictive procedures, malabsorptive procedures, or a combination of the two.

- "Restrictive Procedures" decrease digestive capacity, promote early satiety, and decrease the speed at which food moves through the digestive system.
 - "Adjustable Gastric Banding (AGB)" is where an adjustable band is placed around the outside of the stomach and can be tightened or loosened to achieve the desired effect. It functions by decreasing the stomach capacity and limiting the speed at which food can enter the lower part of the stomach. This procedure is often performed laparoscopically. A unique feature of the procedure is that it is reversible through removal of the band. Risks include developing band slippage and/or erosion through stomach wall in 2-5% of cases. Positioning is important and, if incorrect, can be ineffective and cause vomiting. The Lap-Band™ is an example AGB device.
 - "Sleeve Gastrectomy (SG)" is where the greater curvature of the stomach is resected, resulting in a tube or sleeve-like shape to restrict capacity. This can be performed via open incision or laparoscopically. It can also be combined with malabsorptive surgery in a sequential 2-stage procedure or at a later date if adequate weight loss is not obtained.
- "Malabsorptive Procedures" reduce digestion and absorption of calories through re-arrangement of the digestive system:
 - "Gastric Bypass (Roux-en-Y Gastric Bypass [RYGB])" combines restrictive and malabsorptive features. The stomach is divided into either a horizontal or vertical plane similar to banded gastropathy (restrictive). The Roux-en-Y procedure then takes the small intestine and creates a "Y" shape, where the two legs of the "Y" allow a portion of food to pass through undigested while retaining a limited digestive capacity for the remaining food (malabsorptive). A gastric bypass can be performed via open incision or laparoscopically. Expected weight loss at two years is approximately 70%.
 - "Biliopancreatic Diversion (BPD [Scopinaro Surgery])" was originally proposed to alleviate the metabolic concerns of original bypass procedures. It consists of a subtotal

gastrectomy (similar to sleeve gastrectomy) and diversion of the biliopancreatic secretions. There is a high incidence of vitamin/nutrient deficiency and gallstones, and a prophylactic cholecystectomy is routinely performed at the time of procedure. Duodenal switch is also often performed, which preserves the pylorus, resulting in less metabolic complications. The BPD can be performed via open incision or laparoscopically.

"Repair" refers to a procedure or operation performed to correct and/or treat a complication of a prior surgery.

"Conversion" is when a prior procedure is converted to a new one—for example, when there are complications or inadequate weight loss with the primary surgery. An example is sleeve gastrectomy conversion to Roux-en-Y gastric bypass.

"Revision" refers to a procedure or operation performed due to failure of desired outcome of prior surgery or to reverse/adjust a prior surgery. It does not result in a new procedure, unlike conversion.

Clinical Indications and Coverage

Covered Procedures & Length of Stay

Oscar covers the following procedures and settings for the treatment of morbid obesity in adults (age \geq 18) when medical necessity criteria are met:

- Roux-en-Y gastric bypass (<150cm)
 - Open 2 days inpatient admission
 - Laparoscopic 1 day inpatient admission
- Adjustable gastric banding
 - Laparoscopic Ambulatory
- Sleeve gastrectomy
 - Open 1 day inpatient admission
 - Laparoscopic Ambulatory or 1 day inpatient admission
- Biliopancreatic diversion with duodenal switch
 - Open 2 days inpatient admission
 - Laparoscopic 1 day inpatient admission

Length of Stay (LOS) Extensions

Subject to medical necessity review, Oscar may cover extensions for hospital admission under the following circumstances:

- Patients >65 years old
- In the presence of complex comorbidities (COPD, renal disease, heart failure)
- Conversion from laparoscopic to open procedure
- Complications in the peri- or postoperative phases, such as anastomotic leak, thromboembolic disease (DVT or pulmonary embolism), wound infection, bleeding, pneumonia, respiratory failure, evisceration, or splenic injury

• Clear liquid diet not tolerated during the postoperative phase

Criteria for Covered Procedures

Covered procedures are considered medically necessary when ALL of the following criteria are met:

- 1. Informed consent with appropriate explanation of risks, benefits, and alternatives; and
- 2. Adult aged 18 years or older with documentation of:
 - a. Body mass index (BMI) \geq 40; or
 - b. BMI greater \geq 35 with ONE of the following severe obesity-related comorbidities:
 - i. Clinically significant cardio-pulmonary disease (e.g. severe obstructive sleep apnea (OSA), obesity-hypoventilation syndrome (OHS)); *or*
 - ii. Coronary artery disease, objectively documented via stress test, echocardiography, angiography, prior myocardial infarction, or similar; *or*
 - iii. Objectively documented cardiomyopathy; or
 - Medically refractory hypertension (defined as > 140 mmHg systolic and/or 90 mmHg diastolic despite concurrent use of 3 antihypertensive agents); or
 - v. Type 2 diabetes mellitus.
- 3. Failure to achieve and maintain successful long-term weight loss via non-surgical therapy; and
- 4. Participation in a clinically supervised weight loss program includes ALL of the following:
 - a. Member participation and adherence is documented by the physician, dietitian, or nutritionist (Note: a physician's summary letter is **not** sufficient); *and*
 - b. Behavioral and dietary modification; and
 - c. An exercise regimen (unless contraindicated); and
 - d. The program lasts 6 months within 2 years of the planned bariatric surgery *or* 3 months within 6 months of the planned bariatric surgery; *and*
 - e. The program is in-person (i.e. cannot be entirely remote).
- 5. The proposed bariatric surgery includes a comprehensive pre- and post-operative plan to evaluate nutritional status, overall health, and any specific surgical risks:
 - a. Preoperative evaluation to rule out and treat any other reversible causes of weight gain/obesity, which may include routine lab testing, screenings, and risk evaluations such as:
 - Fasting blood glucose, fasting lipid panel, complete blood count (CBC), lipid/kidney function testing (Complete Metabolic Panel), blood typing, coagulation studies (PT/PTT/INR)
 - ii. Nutrient deficiency screening (vitamin B12, iron, folate) and formal nutrition evaluation by a registered dietician or nutritionist
 - Cardiopulmonary risk evaluation to assess as part of standard pre-operative clearance with EKG, Chest X-Ray, and echocardiogram as appropriate based on medical comorbidities
 - iv. GI evaluation H. pylori screening in high-risk populations and assessment for necessity of cholecystectomy concurrent with surgery, if indicated

- Endocrine evaluation Hemoglobin A1c if diabetic, serum TSH if indicated at risk, and appropriate workup of endocrine abnormalities such as Cushing's disease for suspected reversible causes of obesity as part of history and physical
- vi. Age appropriate cancer screening verified complete and up to date
- vii. Smoking cessation counseling, if applicable
- 6. Psycho-social behavioral evaluation to determine ability to succeed and adhere to postoperative recommendations and long-term follow up and to identify any major mental health disorders that would contraindicate surgery and/or negatively impact patient compliance with postoperative follow-up care and adherence to nutrition guidelines.
 - a. No current substance abuse has been identified; and
 - b. Members who have any of the following conditions MUST have formal, documented preoperative psychological clearance:
 - i. A history of schizophrenia, borderline personality disorder, suicidal ideation, severe depression
 - ii. Who are currently under the care of a psychologist/psychiatrist
 - iii. Who are on psychotropic medications, as necessary in order to exclude members who are unable to provide informed consent or who are unable to comply with the pre- and postoperative regimen

Members with a BMI 30-34.9

A recent joint statement by international diabetes organizations concluded that the current scientific evidence supports a benefit to metabolic surgery in some patients with Class I obesity (BMI 30 - 34.9) who have poorly controlled type 2 diabetes despite optimal medical therapy. However, they also acknowledge continued knowledge limitations related to this population, in particular (a) the relatively modest number of these patients represented in randomized controlled trials to date, (b) the absence of head to head trials comparing the effectiveness of different types of procedures in this population, and (c) the lack of clear definition of what constitute failure of optimal medical therapy. As a result, Oscar will consider the medical necessity of bariatric surgery in members with a BMI of 30 - 34.9 who continue to have poorly controlled type 2 diabetes despite adherence to optimal medical therapy on a case-by-case basis.

Repair, Replacement, Removal, Revision, or Conversion

- 1. **Repair** is considered medically necessary when there is documentation of a surgical complication related to the original surgery, including:
 - 1. Fistula
 - 2. Erosion
 - 3. Leakage of suture/staple line
 - 4. Herniated band
 - 5. Obstruction
 - 6. Enlargement of the pouch due to complications of vomiting

- a. Note: Enlargement of pouch (stretching) is NOT covered if due to overeating, as this is not a surgical complication and is therefore not considered medically necessary.
- 2. **Replacement** of an adjustable gastric band is considered medically necessary only if there are complications (e.g., port leakage, slippage) that cannot be corrected with band manipulation or adjustments.
- 3. **Removal** of an adjustable gastric band medically necessary when recommended by the member's physician.
- 4. **Revision** of a primary bariatric surgery is considered medically necessary when ALL of the following criteria are met:
 - a. The procedure has failed due to dilated gastrojejunal stoma, dilation of the anastomosis site, or dilation of the gastric pouch; *and*
 - b. The initial surgery successfully resulted in weight loss; and
 - c. The member has been compliant with the postoperative plan of diet, exercise, and behavioral modification.
- 5. Conversion surgery is performed in cases of inadequate weight loss when unrelated to surgical complications.
 - a. Oscar considers conversion of an adjustable gastric band to a sleeve gastrectomy, RYGB or BPD/DS medically necessary if there are complications that cannot be corrected with band manipulation or adjustments.
 - b. Oscar considers conversion to a sleeve gastrectomy, RYGB or BPD/DS medically necessary when ALL of the following criteria are met:
 - i. Meets all medical necessity criteria for bariatric surgery as defined above; and
 - ii. Documented compliance with postoperative plan of diet, exercise, and behavioral modification; *and*
 - iii. A minimum of 2 years following original surgery with:
 - 1. Weight loss of less than 50% of preoperative excess body weight; and
 - 2. Remains >30% over ideal body weight.

Coverage Exclusions

Non-Covered Procedures

Oscar considers the following procedures to be experimental, investigational or unproven as they have either not demonstrated long-term benefit, have unnecessary risks, or have demonstrated inferior outcomes to safer, more appropriate techniques:

- Gastroplasty (stomach stapling)
- Intragastric balloon
- Gastric plication (Laparoscopic)
- Vagal blockade
- Mini gastric bypass/Billroth II
- Aspiration therapy procedures
- Jejunoileal bypass

- BPD without duodenal switch
- >150cm long limb gastric bypass (except for BPD with DS)
- Vertical Banded Gastroplasty (VBG)
- Natural orifice transoral surgery (NOTES)
- Silastic ring (Fobi pouch)
- Open adjustable gastric banding
- Prophylactic mesh placement to prevent incisional hernia after open bariatric surgery

Skin Removal Surgery

Excess skin is common after successful bariatric surgery. Removal is considered a cosmetic and elective procedure that is NOT covered by Oscar.

Relative Contraindications

General

- Medically correctable cause of obesity
- Severe or unstable cardiovascular disease
- Severe coagulopathy
- Severe pulmonary disease
- Cirrhosis with portal hypertension
- Ongoing substance abuse or substance abuse in preceding 12 months
- Severe or poorly controlled psychiatric disorder or mental illness
- Medical, psychological, psychosocial, or cognitive condition that prevents adherence to post-op dietary and medical requirements or impairs decision capacity
- Non-compliance with dietary restrictions
- Bulimia nervosa
- Current or planned pregnancy within 12-18 months
- Advanced stage neoplastic disease

Laparoscopic Adjustable Gastric Banding

- Inflammatory bowel disease
- Potential upper GI bleeding such as esophageal or gastric varices
- Congenital or acquired malformations of the GI tract such as stenoses or atresias
- Intra-operative gastric injury during the implantation procedure
- Chronic pancreatitis
- Cirrhosis
- Portal hypertension
- Any infection, bacteremia, or sepsis
- Chronic, long-term use of steroids
- Systemic inflammatory or autoimmune condition such as scleroderma and systemic lupus erythematosus

Malabsorptive Procedures (Roux-en-Y and Biliopancreatic Bypass with Duodenal Switch)

- Inflammatory bowel disease
- Critical need to maintain drug levels, such as in seizure or psychiatric illness, where malabsorption or changes in drug metabolism may result in serious consequences

Applicable Billing Codes (HCPCS & CPT Codes)

Codes covered if clinical criteria are met:

Code	Description
43644	Laparoscopy, surgical, gastric restrictive procedure; with gastric bypass and Roux-en-Y gastroenterostomy (roux limb 150 cm or less)
43645	Laparoscopy, surgical, gastric restrictive procedure; with gastric bypass and small intestine reconstruction to limit absorption
43770	Laparoscopy, surgical, gastric restrictive procedure; placement of adjustable gastric restrictive device (eg, gastric band and subcutaneous port components)
43775	Laparoscopy, surgical, gastric restrictive procedure; longitudinal gastrectomy (ie, sleeve gastrectomy)
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
43770	Laparoscopy, surgical, gastric restrictive procedure; placement of adjustable gastric restrictive device (eg, gastric band and subcutaneous port components) [not covered if history of prior Roux-en-Y gastric bypass or sleeve gastrectomy] [not covered with gastric plication]
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 (ie, sleeve gastrectomy)

43848	Revision, open, of gastric restrictive procedure for morbid obesity, other than adjustable gastric restrictive device (separate procedure)
43850	Revision of gastroduodenal anastomosis (gastroduodenostomy) with reconstruction; without vagotomy
43860	Revision of gastrojejunal anastomosis (gastrojejunostomy) with reconstruction, with or without partial gastrectomy or intestine resection; without vagotomy
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
47562 - 47620	Cholecystectomy
S2083	Adjustment of gastric band diameter via subcutaneous port by injection or aspiration of saline
S9449	Weight management classes, non-physician provider, per session
S9451	Exercise classes, non-physician provider, per session
S9452	Nutrition classes, non-physician provider, per session
ICD-10 codes cove	red if criteria are met:
Code	Description
E66.01	Morbid (severe) obesity due to excess calories
E66.2	Morbid (severe) obesity with alveolar hypoventilation
Z68.35	Body mass index (BMI) 35.0-35.9, adult
Z68.36	Body mass index (BMI) 36.0-36.9, adult
Z68.37	Body mass index (BMI) 37.0-37.9, adult
Z68.38	Body mass index (BMI) 38.0-38.9, adult
Z68.39	Body mass index (BMI) 39.0-39.9, adult
Z68.41	Body mass index (BMI) 40.0-44.9, adult
Z68.42	Body mass index (BMI) 45.0-49.9, adult
Z68.43	Body mass index (BMI) 50-59.9, adult
Z68.44	Body mass index (BMI) 60.0-69.9, adult

Z68.45	Body mass index (BMI) 70 or greater, adult
200.43	body mass index (bivi) / 0 of greater, addit

Codes <u>not covered</u> for indications listed in this Guideline:

Code	Description
15876 - 15879	Suction assisted lipectomy; head and neck, trunk, upper/lower extremities
0312T	Vagus nerve blocking therapy (morbid obesity); laparoscopic implantation of neurostimulator electrode array, anterior and posterior vagal trunks adjacent to esophagogastric junction (EGJ), with implantation of pulse generator, includes programming
0313T	Vagus nerve blocking therapy (morbid obesity); laparoscopic revision or replacement of vagal trunk neurostimulator electrode array, including connection to existing pulse generator
0315T	Vagus nerve blocking therapy (morbid obesity); removal of pulse generator
0316T	Vagus nerve blocking therapy (morbid obesity); replacement of pulse generator
0317T	Vagus nerve blocking therapy (morbid obesity); neurostimulator pulse generator electronic analysis, includes reprogramming when performed
43620	Gastrectomy, total; with esophagoenterostomy
43621	Gastrectomy, total; with Roux-en-Y reconstruction
43622	Gastrectomy, total; with formation of intestinal pouch, any type
43631	Gastrectomy, partial, distal; with gastroduodenostomy
43632	Gastrectomy, partial distal; with gastrojejunostomy (Billroth II) [when specified as bariatric surgery]
43633	Gastrectomy, partial, distal; with Roux-en-Y reconstruction
43634	Gastrectomy, partial, distal; with formation of intestinal pouch
43635	Vagotomy when performed with partial distal gastrectomy (List separately in addition to code(s) for primary procedure)
43647	Laparoscopy, surgical; implantation or replacement of gastric neurostimulator electrodes, antrum
43659	Unlisted laparoscopy procedure, stomach [when specified as gastric plication (laparoscopic greater curvature plication [LGCP]) with or without gastric banding, or mini-gastric bypass procedure]

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
43881	Implantation or replacement of gastric neurostimulator electrodes, antrum, open
43999	Unlisted procedure, stomach [when specified as endoluminal gastric restrictive surgery or placement of intragastric balloon device]
43865	Revision of gastrojejunal anastomosis (gastrojejunostomy) with reconstruction, with or without partial gastrectomy or intestine resection; with vagotomy
43855	Revision of gastroduodenal anastomosis (gastroduodenostomy) with reconstruction; with vagotomy

References

- Adams T, Gress R, Smith S, et al. Long-term mortality after gastric bypass surgery. N Engl J Med 2007 August; 357(8):753-761
- 2. Alami RS, Morton JM, Schuster R. Is there a benefit to preoperative weight loss in gastric bypass patients? A prospective randomized trial. Surg Obes Relat Dis. 2007 Mar-Apr;3(2):141-5
- 3. Buchwald H, Avidor Y, Braunwald E, et al. Bariatric surgery: a systematic review and meta-analysis. JAMA 2004;292:1724 –37
- 4. Choi J, Digiorgi M, Milone L, et al: Outcomes of laparoscopic adjustable gastric banding in patients with low body mass index. Surg Obes Relat Dis 6:367-71, 2010
- 5. Cohen RV, Pinheiro JC, Schiavon CA, et al: Effects of gastric bypass surgery in patients with type 2 diabetes and only mild obesity. Diabetes Care 35:1420-8, 2012.
- 6. Davis J. New weight-loss surgery gains ground. Is the 'Fobi Pouch' an improvement on the traditional stomach bypass? WebMD Medical News. Danbury, CT: WebMD; August 11, 2000.
- Demaria EJ, Winegar DA, Pate VW, et al: Early postoperative outcomes of metabolic surgery to treat diabetes from sites participating in the ASMBS bariatric surgery center of excellence program as reported in the Bariatric Outcomes Longitudinal Database. Ann Surg 252:559-66; discussion 566-7, 2010
- 8. Dixon JB, O'Brien PE, Playfair J, et al: Adjustable gastric banding and conventional therapy for type 2 diabetes: a randomized controlled trial. Jama 299:316-23, 2008
- 9. Duvnjak M, Lerotic I, Barsic N, et al. Pathogenesis and management issues for non-alcoholic fatty liver disease. World J Gastroenterol. 2007 Sep 14;13(34):4539-4550.
- 10. Fried M, Ribaric G, Buchwald JN, et al: Metabolic surgery for the treatment of type 2 diabetes in patients with BMI <35 kg/m2: an integrative review of early studies. Obes Surg 20:776-90, 2010
- 11. Froylich D, Corcelles R, Daigle C, Effect of Roux-en-Y gastric bypass and sleeve gastrectomy on nonalcoholic fatty liver disease: a comparative study. Surg Obes Relat Dis. 2016 Jan;12(1):127-31

- 12. Geloneze B, Geloneze SR, Fiori C, et al: Surgery for nonobese type 2 diabetic patients: an interventional study with duodenal-jejunal exclusion. Obes Surg 19:1077-83, 2009
- 13. Giordano S. Laparoscopic Roux-en-Y gastric bypass versus laparoscopic adjustable gastric banding in the super-obese: peri-operative and early outcomes. Scandinavian Journal of Surgery. 2015; 104(1):5-9
- Harnisch MC, Portenier DD, Pryor AD, : Preoperative weight gain does not predict failure of weight loss or co-morbidity resolution of laparoscopic Roux-en-Y gastric bypass for morbid obesity. Surg Obes Relat Dis 2008;4:445–450
- Himpens J, Dapri G, CadiGB. A prospective randomized study between laparoscopic gastric banding and laparoscopic isolated sleeve gastrectomy: results after 1 and 3 years. Obes Surg. 2006 Nov;16(11):1450-1456
- Hsu WC, Araneta MRG, Kanaya AM, Chiang JL, Fujimoto W. BMI Cut Points to Identify At-Risk Asian Americans for Type 2 Diabetes Screening. Diabetes Care. 2015;38(1):150-158. doi:10.2337/dc14-2391
- Huang CK, Shabbir A, Lo CH, et al: Laparoscopic Roux-en-Y gastric bypass for the treatment of type II diabetes mellitus in Chinese patients with body mass index of 25-35. Obes Surg 21:1344-9, 2011
- 18. Istfan NW, Anderson WA, Apovian CM, : Preoperative weight gain might increase risk of gastric bypass surgery. Surg Obes Relat Dis 2011;7:157–164
- 19. Jamal MH, Corcelles R, Shimizu H, et al. Thromboemoblic events in bariatric surgery: a large multi-institutional referral center experience. Surgical Endoscopy. 2015; 29(2):376-380
- Jammu GS1, Sharma R2. A 7-Year Clinical Audit of 1107 Cases Comparing Sleeve Gastrectomy, Roux-En-Y Gastric Bypass, and Mini-Gastric Bypass, to Determine an Effective and Safe Bariatric and Metabolic Procedure. Obes Surg. 2016 May;26(5):926-32
- Jensen MD, Ryan DH, Apovian CM, et al. 2013 AHA/ACC/TOS Guideline for the Management of Overweight and Obesity in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and The Obesity Society. J Am Coll Cardiol. 2014 Jul 1;63(25 Pt B):2985-3023
- 22. Jih J, Mukherjea A, Vittinghoff E, et al. Using appropriate body mass index cut points for overweight and obesity among Asian Americans. Preventive medicine. 2014;65:1-6. doi:10.1016/j.ypmed.2014.04.010
- 23. 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. 2008 Mar;247(3):401-407. Kellum JM, DeMaria EJ, Sugerman HJ. The surgical treatment of morbid obesity. Curr Probl Surg. 1998;35(9):791-858
- 24. Katzmarzyk P, Barlow S, Bouchard C, et al. An evolving scientific basis for the prevention and treatment of pediatric obesity. International journal of obesity (2005). 2014;38(7):887-905. doi:10.1038/ijo.2014.49
- 25. Kuruba R, Koche LS, Murr MM. Preoperative assessment and perioperative care of patients undergoing bariatric surgery. Medical Clinics of North America 2007;91(3):339-51.

- Lee JH, Nguyen QN, Le QA. Comparative effectiveness of 3 bariatric surgery procedures: Roux-en-Y gastric bypass, laparoscopic adjustable gastric band, and sleeve gastrectomy. Surg Obes Relat Dis. 2016 Jun;12(5):997-1002. doi: 10.1016/j.soard.2016.01.020. Epub 2016 Jan 21
- 27. Lee WJ, Chong K, Chen CY, et al: Diabetes remission and insulin secretion after gastric bypass in patients with body mass index <35 kg/m2. Obes Surg 21:889-95, 2011
- 28. Lee WJ, Chong K, Ser KH, et al: Gastric bypass vs sleeve gastrectomy for type 2 diabetes mellitus: a randomized controlled trial. Arch Surg 146:143-8, 2011
- 29. Lee WJ, Ser KH, Chong K, et al: Laparoscopic sleeve gastrectomy for diabetes treatment in nonmorbidly obese patients: efficacy and change of insulin secretion. Surgery 147:664-9, 2010
- 30. Lee WJ, Wang W, Lee YC, et al: Effect of laparoscopic mini-gastric bypass for type 2 diabetes mellitus: comparison of BMI>35 and <35 kg/m2. J Gastrointest Surg 12:945-52, 2008
- 31. Lee, C. Cirangle, P. Jossart, G. Vertical gastrectomy for morbid obesity in 216 patients: report of two-year results. Surgical Endoscopy 01-OCT-2007; 21(10): 1810-6.
- LeMont D, Moorehead MK, Parish MS, Reto CS, Ritz SJ. Suggestions for the pre-surgical psychological assessment of bariatric surgery candidates. American Society for Bariatric Surgery. October 2004.

s3.amazonaws.com/publicASMBS/GuidelinesStatements/Guidelines/PsychPreSurgicalAssessmen t.pdf (Accessed on January 18, 2017).

- 33. Li Q, Chen L, Yang Z, et al: Metabolic effects of bariatric surgery in type 2 diabetic patients with body mass index < 35 kg/m2. Diabetes Obes Metab 14:262-70, 2012
- Lim, RB. Bariatric operations for management of obesity: indications and preoperative preparation. In: UpToDate, Jones D (Ed), UpToDate, Waltham, MA. (Accessed on January 19, 2017)
- 35. Lim, RB. Bariatric procedures for the management of severe obesity: Descriptions. In: UpToDate, Jones D (Ed), UpToDate, Waltham, MA. (Accessed on January 19, 2017)
- 36. Mechanick JI, Youdim A, Jones DB, et al. Clinical Practice Guidelines for the Perioperative Nutritional, Metabolic, and Nonsurgical Support of the Bariatric Surgery Patient—2013 Update: Cosponsored by American Association of Clinical Endocrinologists, The Obesity Society, and American Society for Metabolic & Bariatric Surgery. Obesity (Silver Spring, Md). 2013;21(0 1):S1-27. doi:10.1002/oby.20461.
- Michalsky M1, Reichard K, Inge T. ASMBS pediatric committee best practice guidelines. Surg Obes Relat Dis. 2012 Jan-Feb;8(1):1-7
- Murr MM, Balsiger BM, Kennedy FP, et al. Malabsorptive procedures for severe obesity: comparison of pancreaticobiliary bypass and very very long limb Roux-en-Y gastric bypass. J Gastrointest Surg. 1999; 3(6):607-612
- 39. Myers JA, Sarker S, Shayani V. Treatment of massive super-obesity with laparoscopic adjustable gastric banding. Surg Obes Relat Dis. 2006; 2(1):37-40
- CGS Administrators LLC. Available at: http://www.cms.gov/mcd/index_local_alpha.asp?from=alphalmrp&letter=P&num_on_page=25& page_num=1. Accessed on January 18, 2016. National Coverage Determination (NCD) for Bariatric Surgery for Treatment of Morbid Obesity (100.1)

- National Heart, Lung, and Blood Institute. Body Mass Index Table 1. https://www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmi_tbl.htm (Accessed on March 5, 2017).
- 42. Nelson DW1, Blair KS, Martin MJ. Analysis of obesity-related outcomes and bariatric failure rates with the duodenal switch vs gastric bypass for morbid obesity. Arch Surg. 2012 Sep;147(9):847-54
- 43. Neovius M, Narbro K, Keating C, et al. Health care use during 20 years following bariatric surgery. JAMA. 2012; 308(11):1132-1141
- 44. Nguyen NT, Ho HS, Palmer LS, Wolfe BM. A comparison study of laparoscopic versus open gastric bypass for morbid obesity. J Am Coll Surg. 2000; 191(2):149-155
- 45. Nguyen NT, Rivers R, Wolfe BM. Factors associated with operative outcomes in laparoscopic gastric bypass. J Am Coll Surg. 2003; 197(4):548-557
- 46. NIH Consensus Conference on Surgical Treatment of Morbid Obesity 1998
- 47. O'Brien PE, Dixon JB, Laurie C, et al: Treatment of mild to moderate obesity with laparoscopic adjustable gastric banding or an intensive medical program: a randomized trial. Ann Intern Med 144:625-33, 2006
- 48. O'Brien PE, MacDonald L, Anderson M, Brennan L, Brown WA. Long-term outcomes after bariatric surgery: fifteen-year follow-up of adjustable gastric banding and a systematic review of the bariatric surgical literature. Ann Surg. 2013 Jan;257(1):87-94
- Ochner CN, Puma LM, Raevuori A, Teixeira J, Geliebter A. Effectiveness of a Prebariatric Surgery Insurance-required Weight Loss Regimen and Relation to Postsurgical Weight Loss. Obesity (Silver Spring, Md). 2010;18(2):287-292. doi:10.1038/oby.2009.230
- 50. Parikh M, Duncombe J, Fielding GA: Laparoscopic adjustable gastric banding for patients with body mass index of <or=35 kg/m2. Surg Obes Relat Dis 2:518-22, 2006
- 51. Pories WJ. Bariatric Surgery: Risks and Rewards. The Journal of Clinical Endocrinology and Metabolism. 2008;93(11 Suppl 1):S89-S96. doi:10.1210/jc.2008-1641
- Ramos AC, Galvao Neto MP, de Souza YM, et al: Laparoscopic duodenal-jejunal exclusion in the treatment of type 2 diabetes mellitus in patients with BMI<30 kg/m2 (LBMI). Obes Surg 19:307-12, 2009
- Roller JE, Provost DA. Revision of failed gastric restrictive operations to Roux-en-Y gastric bypass: impact of multiple prior bariatric operations on outcome. Obes Surg. 2006;16(7):865-869
- 54. Saltzman E, Anderson W, Apovian CM, et al. Criteria for patient selection and multidisciplinary evaluation and treatment of the weight loss surgery patient. Obes Res. 2005;13 (2):234-243
- 55. Sanchez-Santos R, Masdevall C, Baltasar A, et al. Short- and mid-term outcomes of sleeve gastrectomy for morbid obesity: the experience of the Spanish National Registry. Obes Surg. 2009; 19(9):1203-1210
- 56. Sarr MG, Billington CJ, Brancatisano R, et al. The EMPOWER study: randomized, prospective, double-blind, multicenter trial of vagal blockade to induce weight loss in morbid obesity. Obes Surg. 2012; 22(11):1771-1782

- 57. Schauer P, Chand B, Brethauer S. New applications for endoscopy: the emerging field of endoluminal and transgastric bariatric surgery. Surg Endosc. 2007; 21(3):347-356
- 58. Schauer PR, Burguera B, Ikramuddin S, et al. Effect of laparoscopic Roux-en Y gastric bypass on type 2 diabetes mellitus. Ann Surg. 2003; 238(4):467-484
- 59. Schauer PR, Ikramuddin S, Gourash W, et al. Outcomes after laparoscopic Roux-en-Y gastric bypass for morbid obesity. Ann Surg. 2000; 232(4):515-529
- 60. Shah SS, Todkar JS, Shah PS, et al: Diabetes remission and reduced cardiovascular risk after gastric bypass in Asian Indians with body mass index <35 kg/m(2). Surg Obes Relat Dis 6:332-8, 2010
- 61. Sodergren MH, et al. Natural orifice transluminal endoscopic surgery: Critical appraisal of applications in clinical practice. Surgical Endoscopy, January 2009.
- 62. Sudan R, Puri V, Sudan D. Robotically assisted biliary pancreatic diversion with a duodenal switch: a new technique.Surg Endosc. 2007 May;21(5):729-33
- 63. Sultan S, Parikh M, Youn H, et al: Early U.S. outcomes after laparoscopic adjustable gastric banding in patients with a body mass index less than 35 kg/m2. Surg Endosc 23:1569-73, 2009
- Tariq N, Chand B. Presurgical evaluation and postoperative care for the bariatric patient. Gastrointestinal Endoscopy Clinics of North America. 2011;21(2):22940. DOI: 10.1016/j.giec.2011.02.010
- 65. Tevis, S., Garren, M.J. & Gould, J.C. Revisional surgery for failed vertical-banded gastroplasty. Obes Surg (2011) 21: 1220. doi:10.1007/s11695-011-0358-5
- 66. Torgersen Z1, Osmolak A, Forse RA. Sleeve gastrectomy and Roux En Y gastric bypass: current state of metabolic surgery. Curr Opin Endocrinol Diabetes Obes. 2014 Oct;21(5):352-7
- 67. Treadwell JR1, Sun F, Schoelles K. Systematic review and meta-analysis of bariatric surgery for pediatric obesity. Ann Surg. 2008 Nov;248(5):763-76. doi: 10.1097/SLA.0b013e31818702f4
- 68. Tucker ON, Szomstein S, Rosenthal R. Indications for sleeve gastrectomy as a primary procedure for weight loss in morbid obesity. J Gastrotest Surg. 2008;12:662-667
- 69. Wee CC, Pratt JS, Fanelli R, et al: Best practice updates for informed consent and patient education in weight loss surgery. Obesity (Silver Spring) 17:885-8, 2009
- West DS, Harvey-Berino J, Krukowski RA, Skelly J. Pretreatment Weight Change is Associated with Obesity Treatment Outcomes. Obesity (Silver Spring, Md). 2011;19(9):1791-1795. doi:10.1038/oby.2011.22

Approval Signature/Title
5/2/2017
1/18/2018, 4/13/2018
Sean Martin, MD, Medical Director

Clinical Guideline Revision/History Information