



PRE/POST-BARIATRIC SURGERY PROVIDER TOOLKIT

What clinicians should consider in the assessment and treatment of pre- and post-bariatric surgery patients.



2008

Dear Colleagues,

Former Surgeon General Richard Carmona, MD has called obesity “the fastest-growing, most threatening disease in America today”. It is no surprise that many physicians feel overwhelmed and frustrated by the daunting task of addressing weight issues with their patients given the physical, emotional, social, and environmental factors associated with obesity and weight management. Providers hear a variety of messages about the prevention, treatment and management of obesity from health plans, medical specialty associations and the news that make it increasingly difficult to determine the best plan of action to take with patients.

In an effort to address these issues and to improve patient care and outcomes, the California Medical Association (CMA) Foundation and California Association of Health Plans (CAHP) convened expert panels of physicians and other health-care providers to study and discuss published materials and best practices to help clinicians determine the best way to prevent, assess and treat overweight and obesity in their practice.

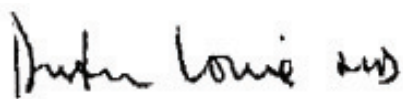
The expert panel divided into three work groups that identified practical information and approaches for healthcare providers. The result is a set of toolkits that address the prevention and effective management of overweight children and adolescents, overweight and obese adults, and pre/post bariatric surgery patients. The toolkits include:

- Effective communication techniques
- Resources for the office
- Strategies for managing overweight patients
- Patient education resources
- Billing and procedure codes
- Clinical guideline abstracts

Please join the efforts of the CMA Foundation and CAHP to reverse obesity trends by utilizing the resources developed by healthcare providers for healthcare providers. The toolkits and additional resources are available on the CMA Foundation and CAHP websites and through participating health plans. For more information visit:

<http://www.calmedfoundation.org/projects/obesityProject.aspx>.

Sincerely,



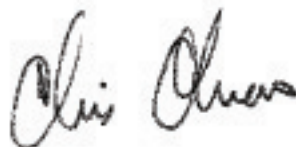
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Toolkit Purpose

In 2006, The California Medical Association (CMA) Foundation and the California Association of Health Plans (CAHP) collaborated with commercial and Medical managed care health plans, practicing physicians and other health provider organizations to complete a provider toolkit addressing the prevention, early identification, weight management education and pre/post bariatric surgery care of overweight and obese individuals. This collaboration brought together leaders from health plans, academic medical centers, physician practices and other providers of health care to share their daily experiences of working to address the growing obesity epidemic in their practice and community.

Through the collaborative efforts and interest of the expert panel individual toolkits have been developed addressing the weight management of Adult Patients, Adolescent/Pediatric and Pre/Post Bariatric Surgery Patients. The Pre/Post Bariatric Surgery toolkit is a stand alone document intended to supplement summary information provided in the Adult and Pediatric/Adolescent Obesity Provider Toolkit.

The object of the Pre/Post Bariatric Surgery toolkit is to supply providers with pertinent information to discuss with patients when considering bariatric surgery as a treatment option. This document contains information about medical, behavioral, psychological and lifestyle changes necessary for long term post operative weight loss success.

Disclaimer

This toolkit is intended for physicians and healthcare professionals to consider in managing the care of their patients before and after bariatric surgery. While the toolkit describes recommended courses of intervention, it is not intended as a substitute for the advice of a physician or other knowledgeable healthcare professional. This toolkit represents best clinical practice at the time of publication, but practice standards may change as more knowledge is gained. Funding for this toolkit was provided by Ethicon-Endo Surgery.

Surgical procedure pictures courtesy of Ethicon Endo-Surgery, Inc.
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BARIATRIC SURGERY OVERVIEW

Bariatric surgery helps obese individuals achieve long term weight loss by limiting the volume of food intake, reducing appetite, slowing digestion and reducing the absorption of calories/nutrients from food. Bariatric surgery is a tool, not a cure, and will not resolve morbid obesity without active participation by the patient. Individual weight loss depends on a complementary commitment to lifestyle alterations, healthy eating habits, and daily physical activity.

Categories of Bariatric Surgery:

1. **Restrictive:** Reduces the amount of food the stomach can hold without interfering with normal digestion of food and essential nutrients.
2. **Malabsorptive:** The digestive tract is shortened to limit the absorption of calories and nutrients from food.
3. **Combination:** Restricts the amount of food the stomach can hold and reduces absorption of calories through surgical alteration of the digestive tract.

Approaches to Surgery:

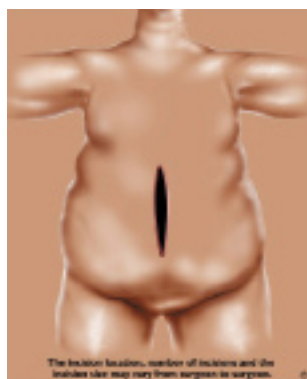
Laparoscopic: A series of small incisions allow insertion of a small video camera and surgical instruments into the abdomen to conduct the surgery. Benefits include:

- Less post operative pain
- Reduced risk of wound infections and incisional hernias
- Faster recovery and return to daily activity



Open: Involves providing the surgeon open abdomen access through a long incision. In some patients conversion from laparoscopic to open surgery may be necessary due to any of the following factors:

- Degree of obesity
- Dense scar tissue from prior abdominal surgery
- Surgeon inability to visualize organs
- Operative bleeding problems
- Co-morbid disease process



COMMON SURGICAL PROCEDURE TYPES

Each type of bariatric surgical procedure has associated benefits, drawbacks, and risk including operative risk, potential for complications and long term weight-loss variation. The possible benefit and risk of each procedure should be carefully considered and discussed with the Bariatric Surgeon to accommodate individual patient need and preference. Depending upon surgeon expertise and patient circumstances other surgical procedure types may be considered. See Appendix C Bariatric Surgical Procedure – Advantages and Disadvantages Table.

Gastric Bypass Roux-en-Y (RYGBP)

This combination procedure is the most commonly used in the United States and is the benchmark standard by which all other bariatric surgical procedures are measured. The restrictive element of the procedure involves partitioning the stomach to create a small gastric pouch allowing food to bypass the lower stomach and portions of the intestine.



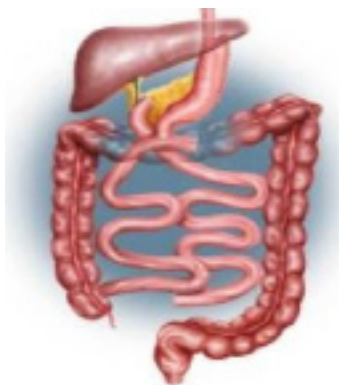
Adjustable Gastric Banding (AGB)

An adjustable hollow band is placed around the stomach near its upper end, creating a small pouch and narrow passage into the stomach inducing weight loss through the restriction of food intake. This type of procedure is reversible and may reduce the risk of nutritional and mineral deficiencies. The Lap-Band® and the REALIZE™ Bands are the two FDA approved devices.



Biliopancreatic Bypass/Diversion with Duodenal Switch

In this variation of the Biliopancreatic Diversion, the stomach is fashioned into a small tube leaving in intact the pyloric valve (which regulates the release of stomach contents into the small intestine) and a small part of the duodenum in the digestive pathway. This procedure restricts the amount of food that can be eaten and limits absorption of food into the body.



EVALUATION OF THE BARIATRIC SURGERY PATIENT

Bariatric surgery is a treatment option for patients with extreme obesity (BMI ≥ 40), or obesity (BMI ≥ 35) with related co-morbid conditions. Surgery should be considered when less invasive methods of weight loss such as diet, exercise, pharmacotherapy, and behavior modification have failed, or the patient is at high risk for obesity related morbidity or mortality¹.

All potential bariatric surgery patients should be evaluated by a comprehensive and multidisciplinary Bariatric Surgery Program often consisting of the following health professionals:

- Primary care physician
- Obesity-specialist: bariatrician, endocrinologist, gastroenterologist, internist
- Cardiologist
- Bariatric surgeon
- Psychologist
- Registered dietitian
- Exercise specialist

Patient Pre-Operative Evaluation and Education Involves:

- Consultation with the bariatric surgeon and other health professionals should include:
 - An in-depth explanation of the surgical procedure to be performed
 - Open discussions about surgical risks, expected benefits, patient responsibilities, and long term management requirements/consequences
 - Additional diagnostic tests including blood work, x-rays/ultrasounds, and EKGs as requested
- Support group attendance
- Review of informational brochures, facts sheets, handouts, booklets, and videos
- Completion of questionnaires
- Pre-operative teaching and education
- Psychological consultations

Pre-Operative Preparations for Providers:

- Mental or behavioral disorders that may interfere with post-operative outcomes including eating disorders, risk taking behaviors, or other psychopathologies should be thoroughly addressed through appropriate mental health referral.
- Careful screening for current or past alcohol abuse and appropriate referral, as post-operative alcohol abuse has been reported in some susceptible patients.
- History of narcotic or illegal drug abuse may indicate need for mental health/drug addiction counseling pre-operatively and evidence that patient is free of such abusive behaviors prior to surgery.
- Patients with diabetes should be in good control pre-operatively. Significant efforts should be made to bring HgA1C within range of control prior to surgery.
- Patients with other medical conditions may require referrals to specialists for further evaluation.

Patient Selection Criteria^{2,3}:

- 100 pounds or more above Ideal Body Weight (IBW) or BMI \geq 40 kg/m².
- BMI \geq 35 kg/m² in association with one or more obesity related health conditions including but not limited to the following conditions:
 - Cardiovascular disease
 - Type 2 Diabetes
 - Sleep Apnea
 - Obesity of long standing

Additional considerations when referring patients to a bariatric surgeon:

- Patient's history of non-surgical weight loss attempts, including completion of non-operative weight loss programs.
- A well-informed, motivated patient with a strong desire for substantial weight loss and a commitment to lifestyle changes.
- Patient understanding of the source of weight problems and responsibilities following surgery.
- Acceptable operative risks with no contraindications to a major abdominal surgery.

When considering referral for bariatric surgery primary care providers should take the following patient factors and potential barriers to post operative success into account³:

- Does the patient have a realistic post surgery long term weight loss expectation?
- Does the patient have the motivation and desire to put into practice any necessary lifestyle changes in preparation for and/or following bariatric surgery?
- Does the family have a history of being overweight or obese?
- Will the patient have access to a good social and family support system?
- Is the patient a chronic smoker or tobacco product user? Bariatric surgery

patients are advised to stop using tobacco products prior to surgery.

- Does the patient use or have a history of substance abuse including alcohol, narcotics, or other illegal substance? Further evaluation may be indicated for patients with a history of substance use.
- Does the patient have any clinically significant or unstable psychopathologies including depression, personality or eating disorders that could prevent a long term successful outcome?
- Is the patient capable of following medical recommendations as directed?
- Does the patient understand how the surgery works?
- Can the patient's existing medical conditions be adequately managed to reduce the risk of post operative complications?
- Will the patient be able to care for him or herself following surgery?
- Does the patient's developmental history indicate any traumatic life events, abuse or neglect that might affect mental stability or lead to adverse coping mechanisms (i.e. eating disorders, etc)?
- Does the patient have any lifestyle or employment stressors that could affect post surgery compliance and outcomes?
- Has the patient been able to lose weight using non-operative means in the past?
- Will the patient be traveling from a distance to the bariatric program for treatment, surgery, and/or follow-up support? Do they have sufficient access to transportation?
- If the patient is traveling from a distance is the primary care provider willing to work with the surgical team to conduct follow-up?
- Does the patient have access to a comprehensive center of excellence (COE) program in bariatric surgery?

SPECIAL POPULATIONS

Some patients should receive special consideration when contemplating bariatric surgery. Risks and complications may be more severe if the patient is in one of the following categories.

Over 65 Years of Age

- Careful consideration on a case-by-case basis, due to the potential for increasing risk of complications associated with advanced age.

Adolescent (Under 18 Years of Age)

- Due to special considerations and specific eligibility criteria for the adolescent populations, please refer to the American Academy of Pediatrics guidelines on bariatric surgery for more information and consult with a bariatric surgeon regarding surgical options.

Women of Child-Bearing Age

- Pregnancy should be avoided for at least 12 to 18 months after bariatric surgery. Women experiencing rapid post surgery weight loss may be at a higher risk for pregnancy problems.
- Pregnant women should be carefully monitored by a OB/GYN and the bariatric surgeon due to special medical considerations.

MEDI-CAL & MEDICARE SURGICAL TREATMENT CRITERIA

Medi-Cal Criteria⁴

- The recipient has a BMI of greater than 40, or less than 40 if substantial co-morbidity exists, such as life-threatening cardiovascular or pulmonary disease, sleep apnea, uncontrolled diabetes mellitus, or severe neurological or musculoskeletal problems likely to be alleviated by the surgery.
- Failure of sustained weight loss on conservative regimens.
- The recipient has a clear and realistic understanding of available alternatives and how his/her life will be changed after surgery, including the possibility of morbidity and even mortality, and a credible commitment to make the life changes necessary to maintain the body size and health achieved.
- The absence of contraindications to the surgery including major life-threatening disease not susceptible to alleviation by the surgery, uncontrolled substance abuse, severe psychiatric impairment and demonstrated lack of compliance and motivation.

Medicare Criteria⁵

- Effective February 21, 2006, Medicare will cover open and laparoscopic Roux-en Y Gastric Bypass (RYGBP), laparoscopic adjustable gastric banding (LAGB) and open/laparoscopic biliopancreatic diversion with duodenal switch (BPD/DS) if certain criteria are met and the procedure is performed in an approved facility. Pursuant to the Medicare National Coverage Determinations Manual (NCDM Pub. 100-03, Chapter 1, Sections 40.5 and 100.1 Bariatric Surgery for Morbid Obesity).
- Medicare will cover weight loss surgery if there is conclusive evidence of the following: Documentation in the medical record of a body-mass index (BMI) ≥ 35 , with at least one co-morbidity related to obesity; and previously unsuccessful medical treatments for obesity.
- CMS has determined that reasonable and necessary bariatric surgery procedures will be covered only when performed at a facility certified by:
 - The American College of Surgeons (ACS) as a Level 1 Bariatric Surgery Center, www.facs.org/cqi/bscn
 - The American Society for Bariatric Surgery (ASBS) as a Bariatric Surgery Center of Excellence, <http://www.asbs.org>.
 - CMS coverage website, www.cms.hhs.gov/MedicareApprovedFacility/BSF/list.asp#topofpage
- The following procedures are not covered for all Medicare beneficiaries:
 - Open/Laparoscopic Vertical Banded Gastroplasty (VBG) and Sleeve Gastrectomy
 - Open Adjustable Gastric Banding (AGB)

POST-OPERATIVE PATIENT CARE⁶

Postoperative bariatric surgery patients require lifelong medical management of obesity related medical problems by the bariatric surgeon and primary care physician. All weight loss surgery patients will need routine follow-up with the bariatric surgeon to minimize the risk of complications and coordinate long term care needs. The frequency of follow-up with the bariatric surgeon depends on the type of procedure performed and program requirements. Some procedures such as Adjustable Gastric Bypass “Lap Band” require more frequent and long-term follow-up for continuing care and band adjustment.

Ongoing follow-up with the bariatric surgeon involves:

- Treatment of chronic medical conditions
- Postoperative complication monitoring
- Management of patient nutritional needs
- Advancement of dietary intake and calorie intake as tolerated
- Vitamin, mineral and protein supplements may be necessary

Patients should have realistic post-operative expectations; the amount of actual weight loss following a bariatric surgical procedure may depend on individual patient factors including⁷:

- Age and health status of patient
- Weight prior to surgery
- Motivation and ability to exercise
- Type of surgical procedure
- Patient motivation and commitment to lifestyle changes
- Cooperation of family, friends, and associates

Postoperative Primary Care Considerations⁸:

- Long term (greater than 1 year) management of patient primary care needs and post-operative follow-ups should be coordinated with the bariatric surgeon and may include labs, a physical examination, and continuing care updates.
- Patients presenting with abnormal or vague abdominal symptoms should be carefully evaluated for bariatric surgery related complications which may indicate a need for further evaluation by the bariatric surgeon.
- Patients considering or undergoing a bariatric surgery procedure outside their health plan network (out of network) or out of country may not receive or have access to adequate post operative continuity of care or follow-up.
- Medications: Extended, delayed-release, enteric/film coated or controlled release medications may not be properly absorbed. Patients may be switched to immediate release medications or liquid formulations, which may impact the degree of medication adherence. Other recommendations are suggested below:
 - Early post-operative patients taking insulin or oral medications for diabetes and hypertension will require close monitoring.

Many patients are discharged home with no need for diabetes and/or hypertension medications during the initial post-operative period. However, these patients will require close follow-up and blood sugar and/or blood pressure monitoring at home to determine if long term control medications will be necessary in combination with dietary management. A patient care plan should be created clearly identifying the frequency of the home testing and which physician will be coordinating appropriate follow-up and monitoring.

- Nonsteroidal anti-inflammatory drugs and salicylates may need to be avoided to prevent ulceration; risk and benefits should be weighed prior to initiation⁹.
- Oral bisophosphonates may also increase the risk of ulceration in the gastrointestinal tract¹⁰.
- Metabolic: Bariatric surgery patients are at ongoing risk for nutritional deficiencies and require daily multi-vitamin supplements. Patients experiencing frequent vomiting during rapid weight loss are at increased nutritional deficiency risk.
- In the event of significant weight regain, the patient should be referred to the bariatric surgeon for follow-up evaluation.
- Pregnancy: Should be avoided for at least 12 to 18 months after bariatric surgery. Women experiencing rapid post surgery weight loss may be at a higher risk for pregnancy problems.
 - Should a patient become pregnant during the first 12 to 18 months, she should immediately follow up with the bariatric surgeon. “Lap-Band” patients need to follow up with the bariatric surgeon for band adjustment.
- Cosmetic Reconstructive Surgery: Some patients will desire cosmetic reconstructive surgery to remove excess skin result from significant weight loss. Most health plans only cover medically necessary reconstructive procedures. Patients should contact their health plan for more information about post surgery benefits and coverage.

SURGICAL COMPLICATIONS

While mortality can occur at anytime, the most common causes of post operative mortality include but are not limited to abdominal sepsis secondary to anastomotic leak, deep vein thrombosis (DVT) with secondary pulmonary embolism (PE) or cardiac or pulmonary complication.

Common Complications may be classified by the operative procedure and include:

Intra-Operative	Early Post Operative (Less than 60 Days)	Late Post Operative (More than 60 days)	Psychological
<ul style="list-style-type: none"> • Anesthesia • Bleeding • Position or pressure • Technical in nature 	<ul style="list-style-type: none"> • Anastomotic leak • Wound or infections • Strictures • Deep Venous Thrombosis • Myocardial Infarction • Congestive Heart Failure • Acute kidney or liver failure • Pulmonary: <ul style="list-style-type: none"> • Atelectasis • Pneumonia • Pulmonary Embolism • Pulmonary Edema • Respiratory arrest secondary to sleep apnea • Acute respiratory distress syndrome (ARDS) • Gastrointestinal (GI): <ul style="list-style-type: none"> • Ulcer • Stricture • Anastomotic obstruction • Small bowel obstruction 	<ul style="list-style-type: none"> • GI Ulcer (stricture, obstruction) • Nutritional Deficiency • Internal/Incisional hernia • Weight Loss Failure • Regain of Lost Weight • Reflux 	<ul style="list-style-type: none"> • Depression • Disruption of social relationships • Anorexia nervosa • Bulimia • Psychosis

Common Post-Operative Side Effects:

• Dumping Syndrome - Physiological reaction caused by rapid gastric emptying of food or liquid into the small intestine. Symptoms may include nausea, cramping, vomiting, diarrhea, dizziness, weakness and shortness of breath.

- Dehydration
- Excess skin
- Food intolerance
- Changed bowel habits

REPEAT PROCEDURES

In some cases a repeat bariatric surgery or surgical revision may be medically necessary to correct complications or technical failures including:

- Implanted device failure
- Gastric pouch of inappropriate size
- Stricture, fistula, obstruction, or other surgical complication

The causes for short or long term weight loss failure should be carefully investigated prior to undertaking a revision procedure. A patient with inadequate weight loss after a procedure that was only restrictive, may be a candidate for a malabsorptive or combination procedure. Patients unable to maintain weight loss after an initially successful operation, should be encouraged to re-double their efforts by following up with the bariatric support program and adhering to the dietary and exercise recommendations. Many bariatric programs have support groups available to motivate and counsel post operative patients.

In rare cases a surgical reversal of the bariatric procedure may be medically necessary to restore digestive capacity and function back to pre-surgery conditions. Complete reversal patients have a high likelihood of returning to a pre-operative weight status.

Post-Operative Phases

Most patients will need to have a post surgery plan that includes diet, nutrition, and physical activity guidance. Weight loss surgery patients will need to significantly change lifestyle and eating habits immediately following surgery to avoid complications and maximize long term success.

It is very important to following eating and drinking instructions as provided by the bariatric surgeons or staff immediately following the operation to allow for healing and adjustment. The health and adjustment process make take a month or more depending upon the individual.

Most patient post operative phases and intervals will vary by procedure type and surgeon preference typically includes the following:

- Keeping hydrated with lots of water
- An advancing diet of clear liquids, broths/soups, pureed food, soft and solid foods as directed
- A progress exercise program by appropriate activity type and duration
- Special instructions and awareness
- A list of foods to avoid
- Patients are strongly encouraged to participate in support groups provided by the Bariatric Surgery Program.
- Patients traveling greater distances to receive treatment and surgery should ask the bariatric surgeon about convenient and easy to find local support groups

LIVING WITH BARIATRIC SURGERY

Diet

- Patients should consume small, frequent meals throughout the day and avoid drinking immediately following meals.
- It is important to stay hydrated throughout the day by drinking at least 6-8 cups of water per day between meals.
- Carbonated beverages should be avoided.
- Some foods may have difficulty passing through the altered gastrointestinal tract and may place the patient at risk for nausea, vomiting, or obstruction.
- Too much or big pieces of food can cause obstruction of the gastric pouch.
- Food should be introduced slowly as tolerated.
- Food tolerance will vary from person to person.
- Avoid grazing or snacking between meals.
- All foods should be thoroughly chewed before swallowing
- Many patients have increased food tolerance difficulties during the morning hours.
- Patients should stop eating when they feel full
- The amount of food the gastric pouch can hold varies by procedure type. Appropriate meal food volume should be discussed with your surgeon.

Exercise

- Setting individual exercise goals will help promote personal investment in post bariatric surgery process.
- Some form of daily physical activity must be introduced in combination with a nutrition plan.
- Patients should consult with their bariatric surgeon and weight management team to find out which physical activities are appropriate.

APPENDIX A: BMI CALCULATION METHOD AND TABLE

An individual's degree of obesity can be assessed by calculating the Body Mass Index (BMI).

BMI is calculated as follows:

Weight in kilograms (kg) divided by the square of height in meters (m ²).	Weight in pounds (lbs) divided by the square of height in inches (in ²) multiplied by 703.
$\text{BMI} = \frac{\text{Weight (kg)}}{\text{Height squared (m}^2\text{)}}$	$\text{BMI} = \frac{\text{Weight (lbs)}}{\text{Height squared (in}^2\text{)}} \times 703$

BMI Overweight and Obesity Classifications:

Category	BMI
Underweight	<18.5
Normal	18.5 - 24.9
Overweight	25.0 - 29.9
Obesity Class I	30.0 - 34.9
Obesity Class II	35.0 - 39.9
Extreme Obesity Class III	>40.0

Source: The National Institutes of Health Publication No. 98-4083, Sept. 1998

BMI Resource Links and Calculators

Centers for Disease Control and Prevention:

- Information about BMI, online calculators (Adults, Child/Teen), and links to additional BMI resources, and growth charts
- <http://www.cdc.gov/nccdphp/dnpa/bmi/index.htm>

National Heart, Lung and Blood Institute – Obesity Education Initiative

- Online BMI calculator and information on assessing risk
- http://www.nhlbi.nih.gov/health/public/heart/obesity/lose_wt/index.htm

PDA Software (Free Downloads for use on Palm OS and Pocket PC)

- Provides information on BMI, PDA calculators (English and Metric measurements), and adult BMI classification tables
- http://hp2010.nhlbihin.net/bmi_palm.htm

Adult Body Mass Index (BMI) Table

Height in Feet and Inches		Weight in Pounds																					
		80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290
4'0"	24	27	31	34	37	40	43	46	49	52	55	58	61	64	67	70	73	76	79	82	85	88	92
4'2"	22	25	28	31	34	37	39	42	45	48	51	53	56	59	62	65	67	70	73	76	79	82	84
4'4"	21	23	26	29	31	34	36	39	42	44	47	49	52	55	57	60	62	65	68	70	73	75	78
4'6"	19	22	24	27	29	31	34	36	39	41	43	46	48	51	53	55	58	60	63	65	68	70	72
4'8"	18	20	22	25	27	29	31	34	36	38	40	43	45	47	49	52	54	56	58	61	63	65	67
4'10"	17	19	21	23	25	27	29	31	33	36	38	40	42	44	46	48	50	52	54	56	59	61	63
5'0"	16	18	20	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59
5'2"	15	16	18	20	22	24	26	27	29	31	33	35	37	38	40	42	44	46	48	49	51	53	55
5'4"	14	15	17	19	21	22	24	26	27	29	31	33	34	36	38	39	41	43	45	46	48	50	51
5'6"	13	15	16	18	19	21	23	24	26	27	29	31	32	34	36	37	39	40	42	44	45	47	48
5'8"	12	14	15	17	18	20	21	23	24	26	27	29	30	32	33	35	36	38	40	41	43	44	46
5'10"	11	13	14	16	17	19	20	22	23	24	26	27	29	30	32	33	34	36	37	39	40	42	43
6'0"	11	12	14	15	16	18	19	20	22	23	24	26	27	28	30	31	33	34	35	37	38	39	41
6'2"	10	12	13	14	15	17	18	19	21	22	23	24	26	27	28	30	31	32	33	35	36	37	39
6'4"	10	11	12	13	15	16	17	18	19	21	22	23	24	26	27	28	29	30	32	33	34	35	37
6'6"	9	10	12	13	14	15	16	17	18	20	21	22	23	24	25	27	28	29	30	31	32	34	35
6'8"	9	10	11	12	13	14	15	16	18	19	20	21	22	23	24	25	26	27	29	30	31	32	33

Key



Healthy Weight



Overweight



Obese

APPENDIX B: BARIATRIC SURGICAL PROCEDURES ADVANTAGES & DISADVANTAGES TABLE

Open Gastric Bypass Roux-en-Y (RYGBP)

Advantages	Disadvantages/Complications
<ul style="list-style-type: none"> • Better weight loss than purely restrictive procedures • Lower incidence of malnutrition • Rapid improvement or resolution of weight related co-morbidities • Reduced appetite 	<ul style="list-style-type: none"> • Dumping Syndrome can occur • Not adjustable • Difficult to reverse • Increased risk of nutritional deficiency • Increased risk of early and late complications: <ul style="list-style-type: none"> • Early complications including anastomotic leak, pulmonary embolism, wound infection, gastrointestinal hemorrhage, respiratory insufficiency, and mortality • Late complications including incisional hernia, bowel obstruction, internal hernia, stomal stenosis, micronutrient deficiencies, and marginal ulcers

Laparoscopic Gastric Bypass Roux-en-Y (RYGBP)

Advantages	Disadvantages/Complications
<ul style="list-style-type: none"> • Better weight loss than purely restrictive procedures • Decreased intra-operative blood loss • Shorter hospital stays • Reduced post surgery pain • Fewer pulmonary complications • Faster recover times • Improved cosmetic outcome • Fewer wound complications resulting from incisional hernia and infections 	<ul style="list-style-type: none"> • Complexity of surgical procedure • Dumping Syndrome can occur • Not adjustable • Difficult to reverse • Increased possibility of internal hernia • Increased risk of nutritional deficiency • Increased risk of early and late complications: <ul style="list-style-type: none"> • Early complications including anastomotic leak, pulmonary embolism, wound infection, gastrointestinal hemorrhage, respiratory insufficiency, and mortality. • Late complications including incisional hernia, bowel obstruction, internal hernia, stomal stenosis, micronutrient deficiencies, and marginal ulcers

Laparoscopic Adjustable Gastric Banding (LAGB)

Advantages	Disadvantages/Complications
<ul style="list-style-type: none"> • Least invasive surgery option • No surgical alteration of gastrointestinal tract • Laparoscopic placement • Band Adjustability • Minimal risk of anemia • Lower risk of mortality • Decreased risk of dumping syndrome • Greater absorption of nutrients from food • Shorter hospital stays • Procedure is reversible by band removal 	<ul style="list-style-type: none"> • Slower initial weight loss • Regular follow-up necessary for band adjustments • Possibility of band slipping • Possibility of intra-operative, post-operative and late complications: • Intra-operative complications including hemorrhage, need for conversion to open procedure, and spleen, stomach or esophagus injury • Postoperative complications include band slippage (stomach prolapse), balloon or tubing leak, port infections, band infections, obstruction and nausea/vomiting. • Late complications including band erosion into the stomach, esophageal dilatation, and failure to lose weight

Biliopancreatic Diversion (BPD) with Duodenal Switch

Advantages	Disadvantages/Complications
<ul style="list-style-type: none"> • Increased amount of food intake compared to bypass and band procedures • Increased food tolerance • Possible greater long-term weight loss • More rapid weight loss 	<ul style="list-style-type: none"> • Higher risk of mortality when compared to other procedures • Requires surgical alteration of stomach • Difficult to Reverse • Not Adjustable • Higher risk of Dumping Syndrome • Greater risk of malnutrition and vitamin deficiency • Risk of decreased fat soluble vitamin absorption (Vitamins A, D, E, and K) • Increased risk of intestinal irritation and ulcers

Source:

- “Brief History and Summary of Bariatric Surgery”. American Society of Bariatric Surgery. Retrieved from www.asbs.org.
- Patient Education Brochure – Taking the Next Step. Inamed Health. www.allergan.com
- The Facts About Weight Loss Surgery Brochure – Ethicon Endo-Surgery Bariatric Edge. 2005. DSL#05-0055 PTE0101.

APPENDIX C: BARIATRIC SURGERY RESOURCES

National Consensus Guidelines/Statements

1. Buchwald, H. Bariatric Surgery for Morbid Obesity: Health Implications for Patients, Health Professionals, and Third-Party Payers. Consensus Statement. American Society for Bariatric Surgery (ASBS). 2005.
2. The Practical Guide – Identification, Evaluation, and Treatment of Overweight and Obesity in Adults. National Heart, Lung, and Blood Institute (NHLBI). October 2000. Retrieved from http://www.nhlbi.nih.gov/guidelines/obesity/prctgd_c.pdf.
3. Roadmaps for Clinical Practice Series: Assessment and Management of Adult Obesity – Booklet 7 Surgical Management. American Medical Association (AMA). 2003. Retrieved from <http://www.ama-assn.org/ama/pub/category/10931.html>.
4. Inge, T., et al. Bariatric Surgery for Severely Overweight Adolescents: Concerns and Recommendations. Pediatrics. January 12, 2006.
5. Agency for Healthcare Research and Quality (AHRQ). “Pharmacological and Surgical Treatment of Obesity”. Prepared by Southern-California-Rand Evidenced-Based Practice Center. AHRQ Publication No. 04-E028-2. July 2004.
6. “Brief History and Summary of Bariatric Surgery”. American Society of Bariatric Surgery. Retrieved from www.asbs.org.
7. Commonwealth of Massachusetts Betsy Lehman Center for Patient Safety and Medical Error Reduction – Expert Panel on Weight Loss Surgery. Executive Report. August 4, 2004.

Continuing Medical Education (CME) Programs

- American Medical Association – Roadmaps for Clinical Practice Series: Assessment and Management of Adult Obesity. <http://www.ama-assn.org/ama/pub/category/10931.html>.

Informational Web Links

Allergan, Inc.
www.allergan.com

American College of Surgeons (ACS)
www.facs.org

American Obesity Association (AOA)
www.obesity.org

American Society of Bariatric Physicians (ASBP)
www.asbp.org

American Society for Metabolic and Bariatric Surgery (ASMBS)
www.asbs.org

California Medical Association Foundation
www.calmedfoundation.org

Center for Medicare & Medicaid Services
www.cms.hhs.gov

Ethicon Endo-Surgery, Inc.
www.ethiconendo.com

North American Association for the Study of Obesity (NAASO)
www.naaso.org

National Heart Lung and Blood Institute
www.nhlbi.nih.gov

Obesityhealth.com
www.obesityhealth.com

Obesity Help
www.obesityhelp.com

Realize™ Personalize Banding Solution
www.realizeband.com

Surgical Review Corporation
www.surgicalreview.org

Weight Loss Surgery Info
www.weightlosssurgeryinfo.com

APPENDIX D: REFERENCES

1. The Practical Guide – Identification, Evaluation, and Treatment of Overweight and Obesity in Adults. National Heart, Lung, and Blood Institute (NHLBI). October 2000.
2. Buchwald, H. Bariatric Surgery for Morbid Obesity: Health Implications for Patients, Health Professionals, and Third-Party Payers. Consensus Statement. American Society for Bariatric Surgery (ASBS). 2005.
3. Commonwealth of Massachusetts Betsy Lehman Center for Patient Safety and Medical Error Reduction – Expert Panel on Weight Loss Surgery. Executive Report. August 4, 2004.
4. EDS Medi-Cal Provider Manual, pg. 200-125-27.
5. MLN Matters Number: MM5013. April 28, 2006. www.cms.hhs.gov/MLN-MattersArticles/downloads/MM5013.pdf
6. Understanding Weight Loss Surgery: Procedures to care for your morbidly obese patients. Ethicon Endo-Surgery, Inc. 2005. page 34.
7. The Facts About Weight Loss Surgery: A Balanced Discussion of Your Treatment Options.
8. Important Considerations of Bariatric Surgery: Provider Information regarding long-term medical issues related to Bariatric Surgery. Ethicon Endo-Surgery, Inc. DSL#03-1301.4.
9. Sapala, JA, et al. *Obes Surg* 1998; 8:505-16-25.
Fosamax (alendrontae sodium) package insert. Whitehouse Station, NJ: Merck & Co. Inc.; 2005 Jul).