FREEMAN
Health System

Bariatric Center

Patient Guide

Freeman Bariatric Center
417.347.1266

Freeman Diabetes Education
417.347.5700

"Only surgery has proven effective over the long-term for most patients with clinically severe obesity."

- The National Institutes of Health Consensus Conference Statement, 1991

For some, no amount of dieting, exercise or lifestyle modification can help significantly impact severe obesity. It's a reality that can lead to frustration, depression, and in many cases, serious health issues. Fortunately, for many in this situation, weight loss through bariatric surgery may be an option. Determining whether you may be a candidate for bariatric surgery is a process that requires serious discussion with your doctor and your family. It is a decision that cannot and should not be taken lightly.

Within the following pages, you will learn more about the choices in bariatric surgery, how they will impact your body and your lifestyle, and what you'll need to do to help maximize your opportunity to take control of your weight and your life.

FREEMAN® Health System
Bariatric Center

Understanding the Impact of Obesity

Obesity is a chronic and progressive disease that can affect multiple organs in the body. Patients with clinically severe obesity are at a medical risk of disability or premature death. The estimated number of deaths attributed to obesity among U.S. adults is approximately 280,000[1] each year. At the top of the list of obesity-related co-morbidities are **adult onset diabetes** and **high blood pressure**.

High blood pressure caused by clinically severe obesity can contribute to heart attacks, congestive heart failure and stroke. Additional conditions commonly caused or worsened by obesity include[2]:

- Obstructive sleep apnea, obesity hypoventilation syndrome, asthma/reactive airway disease
- Atherosclerosis
- Gallbladder disease, GERD (recurrent heartburn), recurrent ventral hernias, fatty liver disease
- Diabetes, hirsutism, hyperlipidemia, hyper-cholesterolemia
- Frequent urinary tract infections (UTIs), stress urinary incontinence, menstrual irregularity or infertility
- Degeneration of knees and hips, disc herniation, chronic non-surgical low back pain
- Multiple skin disorders, mainly related to diabetes and yeast infection between skin folds
- Breast, uterine, prostate, renal, colon, and pancreatic cancer and gallbladder disease

[1] Allison et al. Annual Deaths Attributable to Obesity in the United States. *JAMA.* 1999; 282(16):1530-1538.

[2] Malnick SD, Knobler H. The medical complications of obesity. *QJM.* 2006;99(9):565-579.

Treating Obesity with Weight-Loss Surgery

Obesity can be very difficult to treat. When other medically supervised methods have failed, bariatric surgery can offer a great option for long-term weight control for those with clinically severe obesity.

Are you a candidate for bariatric surgery?

Individuals with a BMI over 40 may be candidates for bariatric surgery. Generally, a BMI over 40 translates to 100 lbs. or more overweight for men, or 80 lbs. or more for women.[3] Bariatric procedures may also be an option for people with a BMI between 35 and 40 who suffer from life-threatening cardiopulmonary problems or diabetes.

Benefits of bariatric surgery

Medical and emotional benefits of weight loss procedures begin almost immediately after surgery. Over time, the benefits following surgery may include:

Significant sustained weight loss[4]

- Most patients lose weight rapidly and continue to do so until 18 to 24 months after surgery
- Although many patients regain some of their weight after 24 months, few regain all

Improvement or elimination of most obesity-related conditions[5]:

- High cholesterol
- High blood pressure
- Obstructive sleep apnea (breathing disturbances during sleep)
- Hypertension
- Type 2 diabetes
- Cardiovascular disease
- Endocrinologic disease
- Dyslipidemia

Open and laparoscopic approach

Most weight-loss surgeries today use laparoscopy, in which a small incision is made in the abdomen and a small camera, or scope, is inserted, enabling the surgeon to view the internal organs on a video monitor. Other small incisions are usually made to insert the surgical instruments. Laparoscopic surgery is less invasive than "open" procedures, resulting in less post-operative pain, fewer wound complications, shorter hospital stays and the potential to return to work more quickly.

[3] Gastrointestinal Surgery for Severe Obesity. National Institutes of Health Consensus Development Conference Statement. March 25-27, 1991: 1-20.

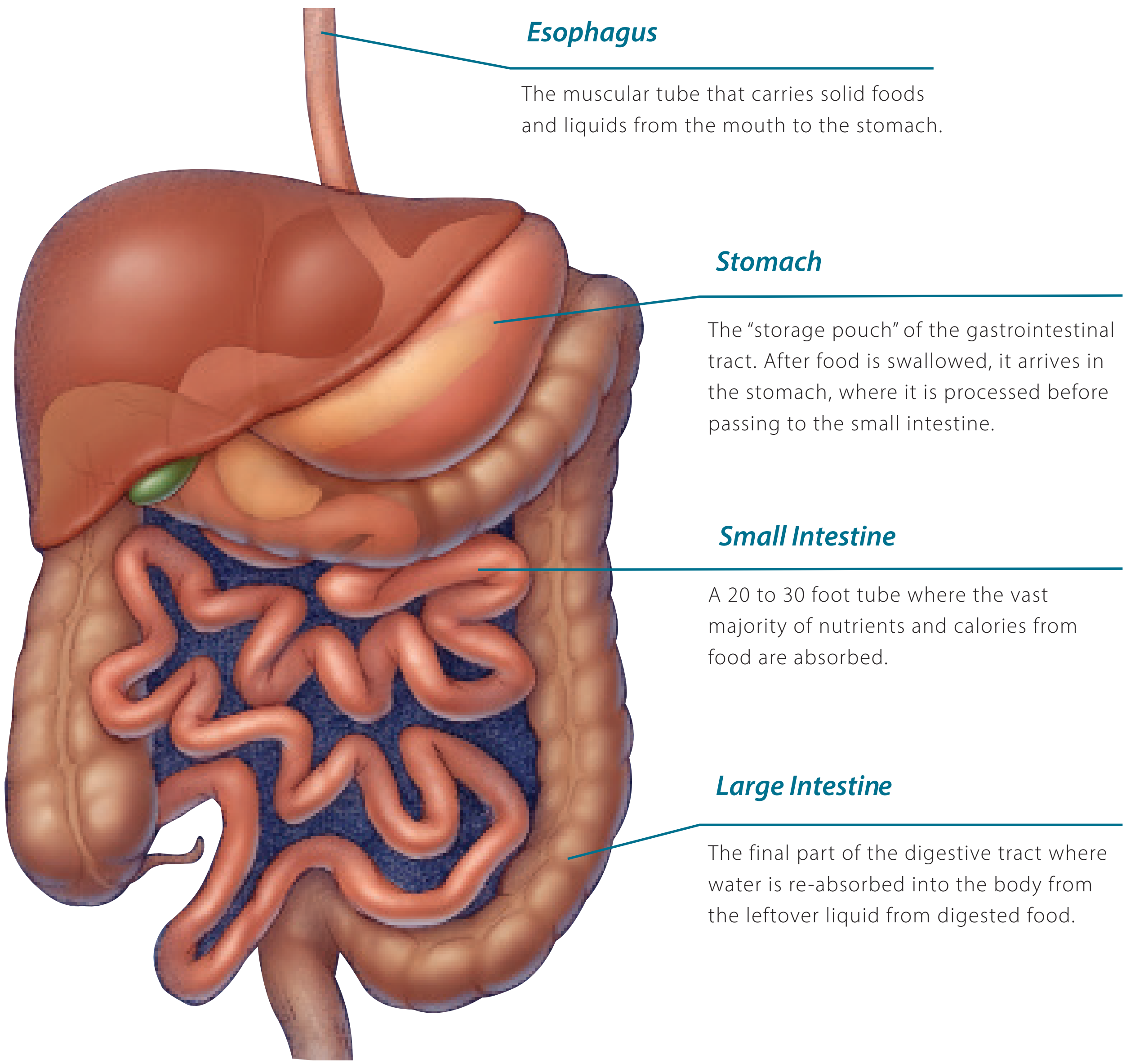
[4] Sjostrom et al. Lifestyle, Diabetes and Cardiovascular Risk Factors 10 Years after Bariatric Surgery. *The New England Journal of Medicine.* December 2004; 351; 26.

[5] Elder KA and Wolfe BM. Bariatric Surgery: A Review of Procedures and Outcomes. *Gastroenterology* 2007; 132:2253-2271.

Understanding the Digestive Tract

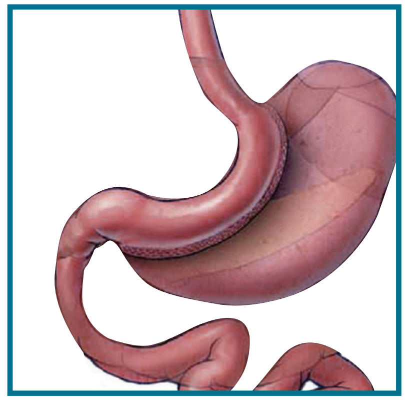
To understand how bariatric procedures differ, we start with a basic understanding of how the digestive system works. Normally, as food moves along the digestive tract, appropriate digestive juices and enzymes arrive at the right place at the right time to digest and absorb calories and nutrients. After chewing and swallowing food, it moves down the esophagus to the stomach where a strong acid continues the digestive process.

The stomach can hold about three pints of food. When the stomach contents move through the pylorus to the duodenum, bile and pancreatic juice speed up the digestive process. Most of the calcium and iron in the foods we eat is absorbed in the duodenum. The jejunum and ileum complete the absorption of almost all calories and nutrients. The food particles that cannot be digested in the small intestine are stored in the large intestine and eliminated.



The Path to Success Begins with Understanding Your Options

Sleeve Gastrectomy



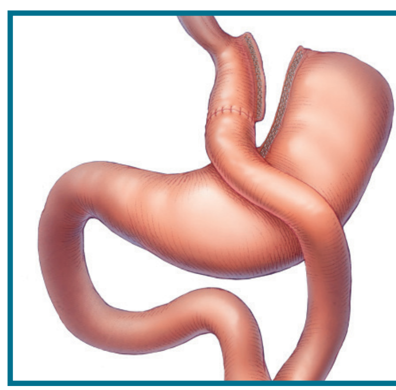
There are two versions of a Sleeve Gastrectomy:

- Vertical Sleeve Gastrectomy
- Partial Gastrectomy

This procedure involves surgery on the stomach only (it is a restrictive procedure) and does not involve the intestine (which would make it malabsorptive). It basically consists of making a stomach that (before surgery) looks like a pouch into a long tube, or "sleeve". The sleeve gastrectomy procedure removes approximately two-thirds of the stomach, which provides for quicker satiety (sense of fullness) and decreased appetite. The smaller stomach sleeve restricts food intake by allowing only a small amount of food to be consumed in a single setting.

1. A small sleeve (or narrow tube) is created with a surgical stapler along the inside curve of the stomach, from the pylorus of the stomach up to the esophagus.
2. After the creation of the sleeve is completed, the remainder of the stomach is removed.
3. The valve at the outlet of the stomach remains, which provides for the normal process of stomach-emptying to continue, allowing for the feeling of fullness.
4. Internal incisions are typically closed with absorbable sutures (stitches that do not need to be manually removed) while external incisions are closed with sutures, steri-strips or staples; based on surgeon preference.

Roux-en-Y Gastric Bypass

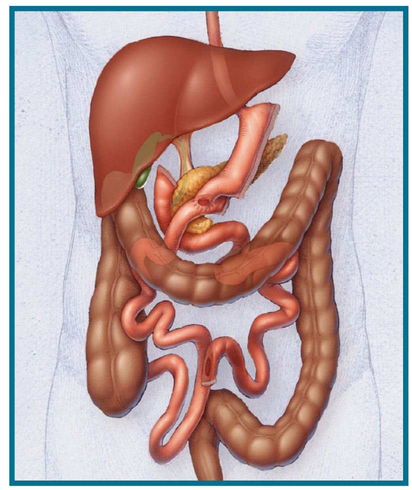


As "gastric bypass" implies, this surgical procedure routes food past most of the stomach and the first part of the small intestine. In addition to restricting food intake, a Roux-en-Y Gastric Bypass reduces nutrient absorption.

1. A small stomach pouch (about the size of your thumb) is created using a surgical stapler.
   a) The small stomach pouch restricts food intake by allowing only a small amount of food to be eaten at one time.
2. The small bowel is divided, using a surgical stapler, approximately two feet in digestive tract length from the stomach.
3. One end of the small intestine is raised and attached to the stomach pouch (this is called the gastrojejunostomy).

4. The other end of the small intestine, still connected to the non-functional stomach remnant, is reconnected to the intestinal tract (this is called the jejunojejunostomy).
5. The surgeon usually places a plastic drainage tube near the gastrojejunostomy to serve as a "sentinel" for a leak in this area and potentially to aid in therapy if a leak occurs.
6. Internal incisions are typically closed with absorbable sutures (stitches that do not need to be manually removed) while external incisions are closed with sutures, steri-strips or staples; based on surgeon preference.

Duodenal Switch



The duodenal bypass (DS) procedure, also known as biliopancreatic diversion with duodenal diversion (BPD-DS) or gastric reduction with duodenal diversion (GRDS), is a procedure that removes part of the stomach and reroutes part of the small intestine.

1. To perform the biliopancreatic diversion with duodenal diversion, a small sleeve (or narrow tube) is created with a surgical stapler, stapling from the esophagus to the pylorus of the stomach.
2. The beginning of the small intestine, called the duodenum, is left connected to the new stomach in the form of a sleeve. The duodenum then divides further down the digestive tract, just before the location where bile and pancreatic juices enter the digestive tract. The lower end of the small intestine is then connected to the start of the duodenum from the pylorus. The valve at the exit of the stomach remains; this allows the normal process of stomach emptying to continue, creating a feeling of being full.
3. The other end reconnects with the small intestine several feet later in the digestive tract.
4. After surgery, food passes through the stomach sleeve and into what was the lower small intestine. Food bypasses the initial part of the intestine, the biliopancreatic limbus.
5. This system modestly restricts food intake while selectively and significantly reducing nutrient absorption.

The Path to Success Begins with Understanding Your Options

Adjustable Gastric Banding

This procedure utilizes an adjustable band that is placed at the top of the stomach to create a small pouch. With its reduced size, this pouch provides a sense of satiety after a very small meal. The opening to the rest of the digestive tract is adjustable through an epidermal port. Weight loss is slower than alternative weight loss procedures, but with appropriate aftercare and routine band adjustments, it has been shown to ultimately result in comparable long-term weight loss three or four years after surgery.

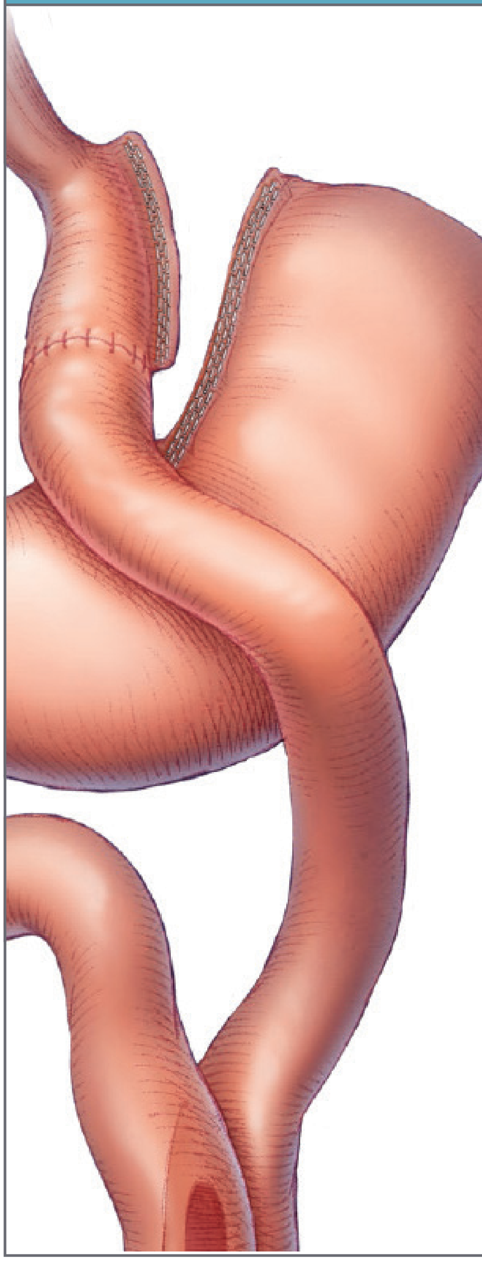
1. A band is placed around the top of the stomach, creating a small pouch that limits food intake.
2. Additionally, a small port is affixed inside the body that allows the band to be adjusted later to make the pouch smaller or larger.
3. Internal incisions are typically closed with absorbable sutures (stitches that do not need to be manually removed) while external incisions are closed with sutures, steri-strips or staples; based on surgeon preference.

Procedural Considerations

Sleeve Gastrectomy	Pros	Cons
	Does not require the implantation of a foreign body, such as a silastic ring used in gastric banding.	Potentially slower weight loss than Roux-en-Y Gastric Bypass or Duodenal Switch.
	The procedure both mechanically decreases the size of the stomach and also decreases the secretion of the hormone ghrelin, which is responsible for the feeling of satiety (the procedure removes part of the stomach that produces this hormone).	Not as much clinical data available (when compared to gastric bypass and adjustable gastric banding).
	There is no malabsorption.	Potential for gastric leaks (due to stapled resection of the stomach).
	There are no anastomoses or rerouting of the intestinal tract.	
	Less vitamin deficiencies when compared to gastric bypass.	
	Less long-term maintenance than gastric banding (no band fills needed).	
	No vitamin or mineral deficiencies due to malabsorption.	
	More weight loss than Adjustable Gastic Banding.[6]	
	Can offer the benefit of initially decreasing body weight in the severely obese patient, to prepare him/her for another surgery at a later time.	

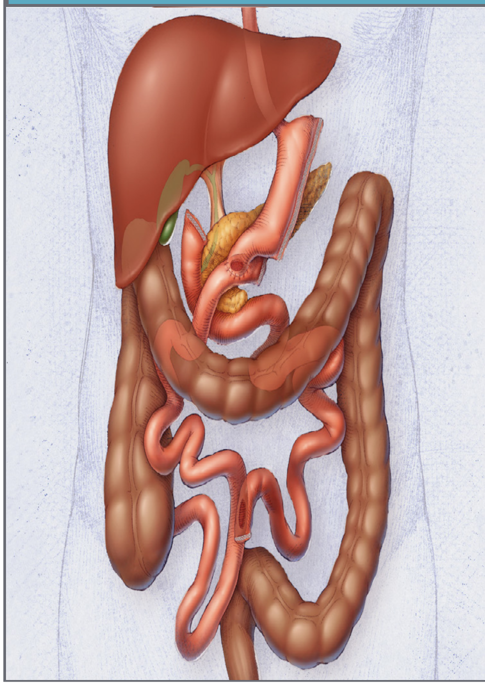
[6] Hutter, M et al. First Report from the American College of Surgeons Bariatric Surgery Ctr. Network Laparoscopic Sleeve Gastrectomy has Morbidity and Effectiveness Positioned Between the Band and the Bypass. *Annals of Surgery,* Vol. 254, No. 3, 410-22. September 2011.

Procedural Considerations

Roux-en-Y Gastric Bypass	Pros	Cons
	Sustained weight loss with limited dietary compliance.	Risks for nutritional deficiencies are higher than restrictive procedures (bypass causes food to skip the duodenum, where most iron and calcium are absorbed).
	Does not require the implantation of a foreign body, such as a silastic ring used in gastric banding.	Anemia may result from malabsorption of vitamin B12 and iron in menstruating women.
	More weight loss than Adjustable Gastric Banding[7]	Decreased absorption of calcium may bring on osteoporosis and metabolic bone disease.
	Less long-term maintenance than gastric banding (no band fills needed).	May cause dumping syndrome, a condition in which stomach contents move too quickly through the small intestine. This can result in nausea, weakness and sweating, faintness and diarrhea – especially after eating sweets.
	Combination procedure – offers both resection and malabsorptive effects.	Potential for gastric leaks (due to stapled resection of the stomach).
	Robust clinical database available.	

[7] Hutter, M et al. First Report from the American College of Surgeons Bariatric Surgery Ctr. Network Laparoscopic Sleeve Gastrectomy has Morbidity and Effectiveness Positioned Between the Band and the Bypass. *Annals of Surgery*, Vol. 254, No. 3, 410-22. September 2011.

Procedural Considerations

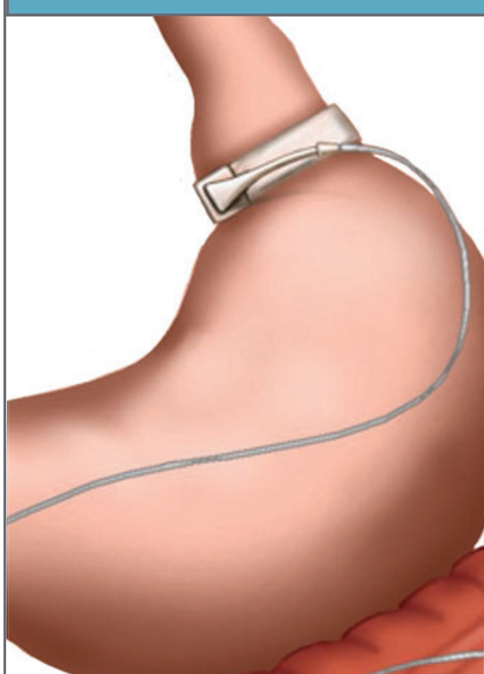
Duodenal Switch	Pros	Cons
	Normal gastric emptying.[1]	Vitamin and mineral deficiencies that can lead to anemia or osteopenia/osteoporosis.[4]
	Higher resolution rate of type 2 diabetes, hyperlipidemia, hypertension and sleep apnea.[2,3]	Foul-smelling bowel movements and flatulence (smelly bowel movements and gas).[4]
	Loss of excess weight.[4]	Diarrhea.
	The best option for patients with BMI ≥ 50.	

1 Martinez Castro R, Baltasar A, Vidal V, Sanchez Cuenca J, Lledo JL. [Gastric emptying in patient with morbid obesity treated with a duodenal switch.] [Article in Spanish] Rev Esp Enferm Dig. 1997;89(5):413-414.

2 Hess DS, Hess DW, Oakley RS. The biliopancreatic diversion with the duodenal switch: results beyond 10 years. Obes Surg. 2005;15(3):408-416.

3 Buchwald H, Avidor Y, Braunwald E, et al. Bariatric surgery: a systematic review and metaanalysis. JAMA. 2004;292(14):1724-1737.

4 Marceau P, Biron S, Hould FS, et al. Duodenal switch: long-term results. Obes Surg. 2007;17(11):1421-1430.

Adjustable Gastric Banding	Pros	Cons
	No resection of the stomach.	Less weight loss than Gastric Bypass and Sleeve Gastrectomy.[8]
	No vitamin or mineral deficiencies due to malabsorption.	Risk of slippage or band erosion, which may result in re-operation.
	There are no anastomoses or rerouting of the intestinal tract.	Risk of mechanical failure, due to port or tubing leakage.
	No protein-calorie malabsorption.	Routine follow-up adjustments required.
		Requires the implantation of a foreign body.

8 Hutter, M et al. First Report from the American College of Surgeons Bariatric Surgery Ctr. Network Laparoscopic Sleeve Gastrectomy has Morbidity and Effectiveness Positioned Between the Band and the Bypass. Annals of Surgery, Vol. 254, No. 3, 410-22. September 2011.

General Surgical Risks

Weight loss surgery, as with any major surgery, has risks that patients should consider. Although surgical complications are infrequent, it is important to fully understand any potential risks to make an informed decision. In general, less serious problems tend to occur more frequently than serious issues, which rarely occur. The surgical team uses expertise and knowledge to avoid complications; however, if a complication does arise, the surgeon and nursing staff will collaborate to resolve the issue. Some complications can involve an extended hospital stay and recovery period; therefore, having a highly qualified medical team is important.

It is important to know that bariatric surgery cannot be completely reversed. The decision to have this procedure must be made in consultation with your surgeon and with careful consideration of the potential benefits and risks and life-long consequences.

There is no amount of weight loss that is guaranteed for bariatric surgery. Weight control is the personal responsibility of the patient. As is true for other treatments for obesity, successful results depend significantly on knowledge, personal motivation and behavioral changes.

Potential side effects of bariatric surgery include, but are not limited, to:

- Nausea and vomiting
- Gas and bloating
- Lactose intolerance
- Temporary hair thinning
- Depression and psychological distress
- Changes in bowel habits

Potential complications of bariatric surgery include, but are not limited, to:

- Infection, bleeding or leaking at suture/staple lines
- Blockage of intestines or stomach pouch
- Dehydration
- Blood clots in the legs or lungs
- Vitamin and/or mineral deficiency
- Protein malnutrition
- Incisional hernia
- Irreversibility or difficulty reversing some procedures
- Revisional procedure(s) sometimes needed
- Death

Speak to your physician about other possible side effects and/or complications that may not be listed here.

Preparing for Surgery

The Weeks Leading Up to Surgery

1. **Exercise**
   a) The best time to begin your exercise program is before your surgery. The sooner you start exercising, the easier it will be after you have surgery. Start moving more, but don't injure yourself. Walking on a daily basis improves your circulation and makes breathing easier during recovery. You will also benefit from having a plan in place prior to your procedure eliminating the need to establish one during your recovery phase. If joint pain becomes an issue and prevents you from walking daily, you may want to look into an aquatics program. Water exercises still condition your breathing, but are not weight bearing and therefore are easier for people who have joint problems.

2. **Hygiene**
   a) Skin integrity is essential for the operative site. It's important to maintain good hygiene, by keeping skin clean and dry, especially in the days before surgery. Skin breakdown could possibly cause your surgery to be delayed.

3. **Medicines**
   a) It is important to avoid aspirin and all aspirin-based medicines for at least 10 days prior to surgery. Herbal medications – such as St. John's Wort, Gingko Biloba, garlic, etc. – should be avoided, as these have blood-thinning properties. Other herbal supplements, such as kava and valerian root, are known to interact with anesthesia and should also be stopped at least 10 days prior to surgery.
   b) Remember to tell your surgeon all of the medicines and herbal supplements you are taking. Do not forget to check the label of your multi-vitamin because many can contain herbal supplements as well. Remember to check all labels of over-the-counter medicines since certain ones can contain aspirin. When in doubt, please check with your pharmacist and/or surgeon.

4. **Tobacco**
   a) Since smoking hinders proper lung function, it can increase the possibility of anesthetic complications. Smoking can increase your risk of complications such as deep vein thrombosis (blood clots in the legs). Smoking also reduces circulation to the skin and impedes healing. Smokers who undergo anesthesia are at increased risk for developing cardiopulmonary complications (pulmonary embolism, pneumonia and the collapsing of the tiny air sacs in the lungs) and infection.
   b) Besides the well-known risks to the heart and lungs, smoking stimulates stomach acid production leading to possible ulcer formation.
   c) Patients are required to stop smoking three weeks before surgery. Patients must also agree to permanently refrain from smoking after surgery. Ask your primary care physician to write you a prescription for a smoking cessation aid, if necessary.
   d) All forms of nicotine must be stopped. This includes cigarettes, cigars and vaping. Smolkless

tobacco should be stopped also. You will be tested for nicotine use prior to surgery.

5. **Alcohol**
   a) Alcohol causes gastric irritation and can cause liver damage. During periods of rapid weight loss, the liver becomes especially vulnerable to toxins such as alcohol. You may find that only a couple of sips of wine can give you unusually quick and strong effects of alcohol intolerance.
   b) In addition, alcoholic beverages are high in empty calories and may cause "dumping syndrome".
   c) For these reasons, we recommend complete abstinence from alcohol for one year after surgery and avoiding frequent consumption thereafter.

6. **Work and disability**
   a) Typically, bariatric surgery patients can expect to return to work in about two to six weeks, however, this can vary from person to person – and may vary greatly. The time you take from work depends on many things, including the kind of work you do, your general state of health, how badly your work needs you, how badly you need to work (i.e., financial need), your general state of motivation, the surgical approach (laparoscopic vs. open) and your energy level.
   b) It is important to remember that you are not just recovering from surgery, but you are eating very little and losing weight rapidly. We caution you to not rush back to full-time work too quickly. The first few weeks are a precious time to get to know your new digestive system, to rest, exercise and meet with other post-operative patients in support group meetings. If financially feasible, take this time to focus on your recovery.
   c) You may not wish to tell the people you work with what kind of surgery you are having. It is perfectly appropriate to tell as much or as little to your employer as you would like. Although you do not need to tell your employer that you are having weight-loss surgery, it is recommended to reveal that you are having major abdominal surgery. Explain that you need two or more weeks to recover, especially if you would like to have some form of financial compensation during your absence.
   d) Your employer should have the relevant forms for you to complete. You may want to indicate that you will not be able to do any heavy lifting for several months after surgery.

The Day Before Surgery

1. **Preoperative instructions**
   a) Your surgeon's office will give you preoperative instructions to follow prior to your surgery. This will include instructions on preparation for surgery, diet and medication instructions. It will also include a date for your preoperative appointment. Please make note of this on your schedule. This will occur within two weeks prior to your surgery date and is ***mandatory*** that you attend.
2. **If you are ill before surgery**
   a) Should you develop a cold, persistent cough, fever, skin breakdown or any changes in your condition during the days before your surgery, please notify the surgeon immediately. You will need to be re-evaluated for surgical readiness. You need to be in the best possible shape for anesthesia. Scheduling can be adjusted to your condition, if necessary.

The Day of Your Surgery

3. Personal preparation

a) We recommend that you shower in the morning on the day of surgery, but do not use any moisturizers, creams, lotions, or make-up. Remove your jewelry and do not wear nail polish.

b) You may wear dentures, but you will need to remove them just prior to surgery.

4. What to bring to the hospital

a) It is recommended to bring only the bare necessities to the hospital. Do not bring any jewelry or more than $20 cash. You may want to bring a picture of a family member, friend or pet to help you relax.

b) There are a few other things that may make your stay a little more comfortable, including:

- This guide
- A small overnight bag with toiletries such as toothbrush, toothpaste, soap, shampoo, and lotion
- Your eyeglasses and a case, if possible
- Protective storage case(s) for corrective lenses, dentures, hearing aids, etc.
- Bathrobe
- Address and contact information of loved ones, or cell phone and charger
- Lip balm
- Comfortable, loose-fitting clothes to wear when you go home; clothes that are easy to slip on are best

5. Hospital pre-admitting procedure

a) Before you can have your surgery, you will need to follow Freeman's policy on pre-admission testing and registration. Specific instructions will be given to you by the hospital or surgeon's office.

b) After you are registered and checked in, you will be asked to change your clothing and put on a hospital gown and slippers. If you wear dentures, corrective lenses, or hearing aids, you will be asked to remove them for safety reasons, so it's best to bring your own container for storing each of these items.

c) You will be asked to sign an operative consent form, even though you may already have done so at your surgeon's office. Your signature indicates that the procedure has been explained to you, that you understand it and that you have no further questions.

d) Your blood pressure, pulse, respiration, oxygen saturation, temperature, height and weight will be measured. An intravenous (IV) line will be placed in your forearm. This allows fluids and/or medications into your blood stream. You may also be given some medicine to help you relax.

6. Anesthesia

a) When general anesthesia is used, you then will be sound asleep and under the care of an anesthesia provider throughout the operation. *Many patients have an instinctive fear of anesthesia. The sophisticated monitoring system used makes recognition and treatment of problems with anesthesia almost immediate. The patient will be continually monitored throughout the procedure.*

b) Your anesthesiologist will discuss the specific risks of general anesthesia with you before your surgery.

7. The operating room

a) Going to the operating room (OR) is not a normal experience for most of us. Your surgical team recognizes the natural anxiety with which most patients approach this step in the process to achieving their goals. We believe a description of the surgical experience will help you prepare for it.

b) Specialists using the most modern equipment and techniques possible will attend to you. This team includes at least one board-certified anesthesiologist, a certified registered nurse anesthetist, a trained surgical assistant, and nurses who will assist your surgeon. A registered nurse is in charge of the OR.

c) Once you enter the OR, the staff will do everything they can to make you feel secure. You will be transported to the OR on a gurney (a bed or stretcher on wheels). There, the nurses who will be assisting your surgeon will review your chart.

d) Once you are settled on the operating table, a quick acting sedative will be given through the IV tubing after you have breathed pure oxygen for a few minutes. Once you fall asleep, your anesthesiologist will usually place an endotracheal tube through your mouth into your windpipe to guarantee that your breathing is unimpeded. An anesthetic gas and other medications will keep you asleep and pain free. At the same time, the anesthesia provider will connect you to monitoring devices.

e) When your surgery has been completed and your dressings are in place, you will be moved to the recovery room.

After Surgery

1. **Recovery**
   a) The hospital stay for bariatric surgery averages one to two days; longer for those with complications. Patients undergoing the laparoscopic method usually have a shorter hospitalization period.
   b) When you return to your room after surgery, you will continue to be closely monitored by your nurses. The first few days after the operation are a critical time for you to heal.
   c) Along with periodic monitoring of your vital signs (blood pressure, pulse, temperature, respirations), your nurses will encourage and assist you in performing deep breathing, coughing, leg movement exercises and getting out of bed after surgery. These activities can help to prevent complications.
   d) Be certain to report any symptoms of nausea, anxiety, muscle spasms, increased pain or shortness of breath to your nurse.
   e) To varying degrees, it is normal to experience fatigue, nausea and vomiting, sleeplessness, surgical pain, weakness and light-headedness, loss of appetite, gas pain, flatulence, loose stools and emotional ups-and-downs in the early days and weeks after surgery. You may discuss specific medical concerns with your surgeon.

2. **Pain control**
   a) You may feel pain where the incision was made or from the position your body was in during surgery. Some patients may also experience neck and shoulder pain after laparoscopy. Your comfort is very important to your medical team. Although there will always be some discomfort after an operation, keeping your pain under control is necessary for your recovery. When you are comfortable, you are better able to take part in activities such as walking, deep breathing and coughing, all of which are imperative in order to recover as quickly as possible.
   b) Please remember that you are not bothering the staff if you are asking for pain medicine! Your nurses and doctors will ask you to pick a way that you can describe your pain. This is done to ensure uniform language.
      - Two helpful ways to describe the pain include the number scale (0 to 10 scale; 0 = no pain; 10 = the worst pain possible) or you can use words (none, mild, moderate, severe).
   c) Here are some pointers to help you become more comfortable:
      - Tell your nurses and physicians if you are having pain, particularly if it keeps you from moving, taking deep breaths and generally feeling comfortable.
      - Everyone is different, so keeping your nurses informed about how you feel will help them help you.
      - Plan ahead for pain; if you are comfortable lying down, you may still need a pain medication to get up and walk around.
      - Keep ahead of the pain. Don't wait for the pain to be at its worse before you ask for pain medicine. Pain medication works best when used to prevent pain.
      - The risk of becoming addicted to pain medicine is very low when it is used for a specific medical purpose, such as surgery.

After Surgery

3. Exercises that help to speed your recovery

a) Changing positions in bed, walking and prescribed exercise promotes circulation. *Good blood flow discourages the formation of blood clots and enhances healing. Getting up, walking and doing your post-operative exercises may help to speed up your recovery and minimize complications.*

b) *Note: the exercises we are about to describe should be repeated at least once every hour after surgery, but it is also a good idea to practice them before surgery in order to help increase lung function and agility.*

c) With the help of your nurse or physical therapist, you should sit up and dangle your feet the first night of surgery and stand at your bedside. Yes, it may hurt, but each time you get out of bed it will get easier. Each day you will notice your strength returning, with less and less pain. *You will be asked to get out of bed and walk the first post-operative day. After that, you will be required to walk at least three times per day and perform your leg and breathing exercises hourly. You may not feel well enough to go for a walk, but it is very important that you try your best and do as much as possible.*

d) Your nurse will instruct you in coughing and deep breathing, and you will be shown how to use an "incentive spirometer" to help you expand your lungs. Coughing and deep breathing are important so that you will loosen any secretions that may be in your throat or lungs and to help prevent pneumonia. Deep breathing also increases circulation and promotes elimination of anesthesia.

e) The proper way to deep breathe and cough is to follow these steps:

- Inhale as deeply as you can
- Hold breath for two seconds
- Exhale completely
- Repeat the above steps three times
- Inhale deeply
- Cough – the cough should come from the abdomen, not from your throat; hold your pillow on your abdomen for support

f) The proper way to exercise your feet and legs is to follow these steps:

- Push your toes of both feet toward the end of the bed *(as if you're pressing down on a gas pedal)*
- Pull your toes toward the head of your bed, then relax
- Circle each ankle to the right, then to the left
- Repeat three times

Home Again

The Days and Weeks After Surgery

1. **Your discharge**
   a) Your date of discharge from the hospital will be determined by your surgeon based on your individual progress. Prior to your discharge, specific dietary and activity instructions will be reviewed with you, along with precautions and situations when your surgeon should be notified. Discuss your "going home" concerns with your nurse or discharge coordinator.

2. **Planning your recovery at home**
   a) You should give some thought to your living environment. Are there many steps in your home? Is your bedroom upstairs? How accessible is your bathroom? Please tell the hospital staff about your living environment so they can prepare your "going home" plan with your specific needs in mind. Nonetheless, a rubber shower head with a detachable hose, long sponge stick (or kitchen tongs), and toilet lift are all useful items.

3. **Following up**
   a) Your medical team cares about your progress. Keep in touch with them; they will do their best to make sure you are well taken care of.
   b) Your first office visit with your surgeon should be scheduled 10 days to three weeks after your surgery. Your surgeon's discharge instructions will tell you when you should return to the office for follow-up.
   c) You will continue to see your surgeon on a periodic basis after your initial follow-up office visits. Generally, your surgeon likes to see you at six weeks post-op, three months post-op, six months post-op, nine months post-op, and then annually thereafter.
   d) Please call your surgeon's office with any surgical concerns between scheduled visits.
   e) Don't leave your primary care physician out of the loop – be sure to contact him or her with any medical concerns as well.

4. **Specific recovery instructions**
   a) There are many things you will experience once you are home recovering. When you get home, plan on taking things easily for a while. Your body is still recovering from the stresses of major surgery and weight loss during the recovery period. Your activity will be restricted and you will be required to forego strenuous activity for three to six weeks after the operation. You may walk and perform light household duties as tolerated upon your return home.
   b) During the first several weeks after your surgery, you may feel weak and tire easily after activity. However, try to be as active as possible.
   c) Usually, frequent walks of short duration are tolerated more than one or two long walks that go to or past the point of fatigue. Increase the distance that you walk gradually. The more physically active you can be, the better. It will enhance your recovery and ultimately give you more energy. Continue walking at least four times per day, so that you are walking 30 to 45 minutes per day by the sixth week. By the time of your six weeks' office visit, you should be walking regularly two

miles per day or more unless you have specific problems with your weight bearing joints. In the latter case, water exercises are recommended. You can start water activities approximately three weeks after surgery.

d) You may be tired, weak, nauseated or have vomiting the first few weeks after surgery. Keep up your fluid intake with small, frequent sips as necessary (64 ounces per day is the recommended intake).
e) Resume traveling short distances as soon as you feel strong enough to make the trip. Do not drive a motor vehicle until you are off of the prescription pain medications, usually about one week after surgery.
f) Avoid sitting and standing without moving for long periods. Change positions frequently while sitting, and walk around in lieu of standing still. These strategies may help to prevent blood clots from forming in your legs.
g) Climbing stairs is encouraged.
h) Avoid lifting anything heavier than 10 pounds, or doing push or pull motions (i.e., vacuuming) during the first six weeks after your surgery.
i) Avoid heavy work such as lifting, carrying, or pushing heavy loads for the first three months after your surgery.

5. Personal hygiene

a) Most patients like to have someone home with them the first few days after surgery for emotional and physical support. Due to the nature of abdominal surgery, you may need some help with using the toilet.
b) Flushable baby wipes tend to be gentler for personal hygiene, as well as a peri-bottle. You can use a small sports-top water bottle. A long sponge stick can also be helpful.

6. Wound care

a) Your wound should need minimal care. If sutures were used, they will most likely dissolve, so there is no need to remove any stitches.
b) You may notice some tape on your wound. This tape is called "steri-strips" and the material should fall off on its own.
c) If surgical staples were used, they will have to be removed, usually around your 10th post-op day. The removal of surgical staples should be painless.
d) No matter how your wound was closed, it is important to keep the wound clean and dry to promote faster healing. Unless otherwise prescribed, you should shower, wash with soap, rinse and dry thoroughly. If the wound is oozing or catching on clothing, you may cover it with a very light dressing, but otherwise leaving the wound open to air, whenever possible, may help prevent suture infection.
e) After about three weeks, the incision is usually ready for immersion. Ask your surgeon for the official "go ahead" before taking a bath. As you feel stronger, you may enjoy a swim or a soak in the tub.

f) Despite the greatest care, any wound can become infected. If your wound becomes reddened, swollen, leaks pus, has red streaks, has yellow/green purulent and/or odorous drainage, feels increasingly sore or you have a fever above 100.5˚F, you must call your surgeon right away.

g) Do not use any antibiotic ointment or other occlusive ointment on your incision, unless specifically instructed to do so by your medical team.

7. Urgent concerns

a) Even though we do not expect you to have any serious problems after your surgery, some symptoms that you may experience need to be addressed immediately. If you experience any of the following symptoms, contact your surgeon right away:

i) Fever of 100.5˚F or above

ii) Redness, swelling, increased pain and/or pus-like drainage from your wound

iii) Chest pain and/or shortness of breath

iv) Nausea and/or vomiting that lasts more than 12 hours

v) Pain, redness and/or swelling in your legs

vi) Urine output less than four times in 24 hours

vii) Pain that is unrelieved by pain medication

b) Normal symptoms

i) Moderate swelling and bruising are normal after any surgery (*note: severe swelling and bruising may indicate bleeding or possible infection)*

ii) Mild to moderate discomfort or pain (*note: if the pain becomes severe and is not relieved by pain medication, please contact your surgeon)*

iii) Numbness – small sensory nerves to the skin are occasionally cut when the incision is made or are interrupted by undermining of the skin during surgery. The sensation in those areas usually returns – typically within two to three months as the nerve endings heal (*note: be especially careful not to burn yourself when applying heating pads to the area that may have some post-operative numbness)*

iv) Itching – itching and occasional small shooting electrical sensations within the skin frequently occur as the nerve endings heal; these symptoms are common during the recovery period *(note: ice, skin moisturizers, vitamin E oil and massage are often helpful)*

v) Redness of scars – all new scars are red, dark pink or purple; the scars take about one year to fade (*note: we recommend you protect scars from the sun for a year after your surgery; even through a bathing suit, a good amount of sunlight can reach the skin and cause damage, so wear a sunscreen with a skin-protection factor (SPF) of at least 15 when out in sunny weather)*

8. Recommended home supplies

Pharmacy supplies

a) Gauze pads
b) Bandage tape
c) Cotton balls
d) Hydrogen peroxide
e) Thermometer
f) Heating pad
g) Acetaminophen

9. Nausea

a) Nausea may be related to insufficient chewing, fullness, sensitivity to odors, pain medication, not eating, post-nasal drip and/or dehydration.

b) For nausea that occurs in the first days after surgery, the nausea usually can be suppressed with medications called anti-emetics.

c) In unusual cases, the nausea can be so severe that it prevents patients from taking in adequate amounts of liquids. If this happens, you will need to come back to the hospital to receive IV fluids. Persistent vomiting may lead to dehydration and electrolyte imbalance and may cause vitamin deficiencies to occur.

d) Odors can sometimes be overwhelming after surgery. Many patients have found that putting a few drops of peppermint essential oil on a handkerchief can be very helpful if you are dry heaving. Avoid perfumes and scented lotions. If food odors bother you, try having someone else prepare your meals or prepare bland foods.

e) Learn to recognize when you are full. This will not happen immediately, but by eating very slowly, it will become easier.

f) Sucking on a cinnamon stick may sometimes help to alleviate nausea.

g) If you believe your pain medication is the cause of your nausea, call your surgeon's office to request a prescription change.

h) Stay hydrated – fluids should be continuously sipped all day long to prevent dehydration. You need a minimum of 64 ounces of fluids per day. Increase this amount if you are sweating.

i) Take your nausea medication as prescribed by your surgeon.

10. Vomiting

a) Vomiting is often associated with eating inappropriately. It is quite difficult to gauge in the beginning of your post-op recovery how little food will satisfy your hunger. Chances are that you are going to feel full with very little food. A couple of teaspoons may be all you can take at one time.

b) Possible causes of vomiting:
   - Eating too fast
   - Not chewing food properly
   - Eating food that is too dry
   - Eating too much food at once
   - Eating solid foods too soon after surgery
   - Drinking liquids either with meals or right after meals
   - Drinking with a straw
   - Lying down after a meal
   - Eating foods that do not agree with you
c) Possible ways to prevent vomiting:
   - Chew your food well
   - Keep your food moist
   - Eat only half of what you anticipate eating; if there is still space, and you still feel hungry, you can always eat more
   - Strictly following your recommended post-op diet
d) If you experience prolonged vomiting, stop eating solid foods and sip clear liquids (clear and very diluted juice, broth and herbal tea). Should you have difficulty swallowing foods or keeping foods down, please call your surgeon.
e) Vomiting may indicate that the stomach pouch is blocked. If vomiting continues for more than 24 hours, contact your surgeon, since vomiting can lead to severe dehydration, a situation that needs to be taken very seriously.

11. Dehydration

a) Dehydration will occur if you do not drink enough fluids. Symptoms include fatigue, dark colored urine, fainting, nausea, low back pain (a constant dull ache across the back) and a whitish coating on the tongue. Blood work should be done if symptoms persist in order to establish the severity of dehydration.
b) Dehydration may lead to bladder and kidney infections. Contact your surgeon if you believe you may be dehydrated. In some cases, you may be admitted to the hospital so fluids can be administered intravenously.
c) Here's what you can do to help prevent dehydration:
   - Buy a sports bottle and take it with you everywhere so you can sip water all day
   - Drink at least 64 ounces of fluids per day; increase this amount if you are sweating
   - Avoid beverages that contain caffeine – they are diuretic and can dehydrate you.
   - If you have difficulties drinking due to nausea, suck on ice chips

12. Bowel habits

a) It is normal for you to have one to three bowel movements of soft stool per day. It may be foul smelling and associated with flatulence. Most of these changes resolve as your body heals and you adapt to changes. Please call your surgeon, should you have persistent diarrhea.

b) After restrictive surgery, the amount of food consumed is greatly reduced, and the quantity of fiber or roughage consumed may be much smaller. Correspondingly, the amount of bowel movements will be diminished, causing less frequent bowel activity and sometimes constipation. If this becomes a problem, a stool softener may be indicated to avoid rectal difficulties.

c) Here is what you can do to keep your bowel movement regular:
- Remember that your stools will be soft until you eat more solid food
- Lactose intolerance and high-fat intake are generally the culprits of loose stools and diarrhea; avoid all high-fat foods and discontinue the use of all cow's milk products; yogurt is okay
- If cramping and loose stools (more than three per day) or constipation persist for more than two days, please call your surgeon's office

13. Flatulence

a) Everyone has gas in the digestive tract. Bariatric patients have a shortened bowel, which can cause gas to be more odorous and expelled more forcefully. Gas comes from two main sources: swallowed air and normal breakdown of certain foods by harmless bacteria that are naturally present in the large intestines.

b) Foods high in carbohydrates cause gas; those high in fat and protein cause very little.

c) The foods that are known to cause more gas are beans, veggies, some fruits, soft drinks, whole grains/wheat and bran, cows' milk and cows' milk products, foods containing sorbitol and dietetic products.

d) Here are some things you can do to help prevent flatulence:
- Eat your meals more slowly, chewing food thoroughly
- Lactose intolerance is generally the culprit of gas, so discontinue eating all cow's milk products; yogurt is okay
- Avoid chewing gum and hard candy
- Avoid drinking with a straw
- Eliminate carbonated beverages
- Remedies include lactobacillus acidophilus, natural chlorophyll and simethicone

14. Hernias

a) You may minimize the risk of developing a hernia by avoiding heavy lifting for three months after surgery.

b) You may notice a bulge under the skin of your abdomen. What you are seeing are the bowels that are not being contained in the abdomen, due to a weakness in the abdominal wall at the site of the incision. You may feel pain when you lift a heavy object, cough or strain during urination or bowel movements. The pain may be sharp and immediate. In some cases, the pain may be a dull ache that gets worse toward the end of the day or after standing for a long period of time. If you think you may have a hernia, please call your surgeon for a consultation.

c) Surgery is the only way to repair a hernia. If the hernia comes out and will not go back in when you lie down and is associated with pain and vomiting, it can result in an emergency. Call your surgeon's office or your primary care physician on an emergency basis.

15. Thrush/yeast infections

a) You may notice that after surgery you have a white, cottage cheese-like coating on your tongue. The tongue could also be very red and inflamed. Most likely you have thrush – a yeast overgrowth in your mouth. Often, this is due to large amounts of antibiotics peri-operatively. Call your primary care physician if you should have an oral infection or a rash on your skin.
   - You may reduce this problem by taking Lactobacillus acidophilus in addition to the prescribed regimen post-operatively.

b) Vaginal yeast infections are caused by yeast called Candida albicans. Yeast are tiny organisms that normally live in small numbers on the skin and inside the vagina. If the acidic environment of the vagina becomes less acidic, too many yeast can grow and cause a vaginal infection. Symptoms include itching and burning of the vagina and around the outside of the vagina (vulva), a white vaginal discharge that may look like cottage cheese and swelling. If you have symptoms of a yeast infection, call your primary care physician or your gynecologist.
   - You can help prevent yeast infections by not wearing tight-fitting or synthetic clothing, wearing cotton underwear, not wearing pantyhose every day, and not douching or using feminine sprays. You may also take Lactobacillus acidophilus in addition to the prescribed regimen post-operatively.

16. Anemia

a) It is recommended all menstruating women take an iron supplement in order to prevent anemia. Please contact your physician to find out which iron supplement is best for you.

b) Signs of iron deficiency anemia include paleness, weakness, difficulty maintaining body temperature, fatigue, dizziness and shortness of breath.

c) Iron deficiency may also be caused by low vitamin A. Vitamin A helps to mobilize iron from its storage sites, so a deficiency of vitamin A limits the body's ability to use stored iron. This results in an "apparent" iron deficiency because hemoglobin levels are low, even though the body can maintain an adequate amount of stored iron.

17. Transient hair loss/skin changes

a) Hair thinning or loss is expected after weight loss. It is temporary, but we know that does not make it any less disheartening.

b) During the phase of rapid weight loss, calorie intake is much less than the body needs, and protein intake is marginal. Your body reacts to this deprivation in various ways, with a common side effect being hair thinning or hair loss. This is a transient effect and resolves itself when nutrition and weight stabilize. The hair loss usually occurs anywhere from three to nine months after surgery.

c) You may help to minimize the loss of hair by taking your multi-vitamins daily and making sure that you consume at least 75 grams of protein per day. Nioxin shampoo has been shown helpful for some patients, as well as biotin tablet or powder.

d) We advise patients to avoid hair treatments and permanents, to prevent stressing your hair from the outside too.

e) Skin texture and appearance may also change after bariatric surgery. It is not uncommon for patients to develop acne or dry skin after surgery, since protein, vitamins, and water intake are also important for healthy skin.

18. Scars

a) Scars are expected after any surgery. The size of the scars depends on the type of procedure (open versus laparoscopic), the sutures used and how your body heals.

b) There is a way to help make scars less visible, should this be a concern of yours. Once your incisions are fully healed, you may start using silicone pads and scar-minimizing creams to make the scars look softer, smoother, flatter, and closer to your skin's natural color.

c) Keep your scars out of the sunlight to help them heal properly.

19. Sexuality/pregnancy

a) You may resume sexual activity when you feel physically and emotionally stable.

b) Women need to use a mechanical form of birth control, as fertility may be increased with weight loss and oral contraceptives may not be fully absorbed.

c) Many severely obese women are also infertile, because the fatty tissue soaks up the normal hormones and makes some of its own as well. This may confuse the ovaries and uterus and causes a lack of ovulation. As weight loss occurs, this situation may change quickly.

d) You may start planning a pregnancy after weight loss stabilizes, but it is imperative not to become pregnant during the first 18 months after your surgery, since we want both you and the baby to be healthy and safe.

e) If you become pregnant, along with extra servings of protein, vitamins and blood tests, we ask that you arrange for your OB/GYN to contact your surgeon's office. They will be able to discuss specific information about your surgery, so the specialists can collaborate their efforts.

Keys for Weight Loss Success

1. **A life-long commitment**
   a) Surgery gives patients the physical tool to assist with weight loss, but patients must be committed to making the mental and emotional changes necessary after weight-loss surgery to increase potential successful weight loss. This commitment will also help with long-term weight maintenance.
   b) Patients who undergo weight-loss surgery must be committed to vitamins and supplements, healthy eating, office follow-ups, exercise, and support group attendance for life. Your emotional and physical well-being is dependent on this commitment. Learn from your surgeon what is expected of you, and make the life-long commitment to maintain your well-being.
   c) Lack of exercise, poorly balanced meals, constant grazing, eating processed carbohydrates and drinking carbonated beverages are common causes of regaining weight after surgery. You will need to manage your food intake and exercise for the rest of your life.

2. **Personal responsibility**
   a) Patients who commit to eating healthy foods, take the required supplements, have routine blood work drawn and incorporate an exercise program into their lifestyles have increased potential for the best long-term results.

3. **Balanced nutrition**
   a) Adhering to healthy nutrition after weight loss is essential for long-term success and weight maintenance. Incorporating all of the food groups according to the American Dietetic Association (ADA) guidelines is a place to begin for good health.

4. **Support groups**
   a) Support groups are an integral part of the healing process, physically and emotionally. All patients are encouraged to incorporate a support group into their monthly schedule.

5. **Exercise**
   a) In a reduced-calorie state, the body's natural tendency is to use muscle for immediate energy needs. Therefore, it is essential to incorporate a fitness program after surgery. Exercising at least three times per week conserves lean muscle mass, burns fat and increases your potential for long-term success.

6. **Vitamins, minerals and protein supplements**
   a) Because weight-loss surgery changes the digestive process, life-long nutritional supplements are essential. You will be given information and recommendations on where and what to purchase.
   b) Vitamin deficiencies are often predictable and preventable. Take your vitamins and supplements and commit to seeing your surgeon on a regular basis for lab work and follow-up.

A Better Understanding to Make the Best Decision

Now that you've had a chance to learn more about bariatric surgery, what to expect and what you need to do to increase your chances of weight loss success, you can make the decision that's best for you and your situation. In taking this first step, you've started the journey that can ultimately lead to a healthier lifestyle and healthier you.