

Weight-Loss Surgery

Patient education handbook index

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I. Pre-surgery patient instructions

You will receive pre-operative and post-operative instructions in your Pre-Surgical Testing (PST) packet, which will be provided to you upon your final visit with the bariatric surgeon.

II. Gathering the facts

Bariatric surgery provides an excellent, sometimes life-saving, option for people who are severely obese and cannot lose weight by traditional means, as well as those who suffer from serious obesity-related health issues. Obesity results from the accumulation of excess body fat to the point that a person's health is affected. When obesity becomes a chronic condition that is difficult to treat through healthy diet and exercise, it may be referred to as severe obesity.

One of the methods used to measure obesity is Body Mass Index (BMI). BMI is calculated by taking your weight in pounds and dividing by your height in meters squared ($BMI = \text{kg}/\text{m}^2$). Your BMI, along with your ideal body weight, are used to determine if you are a candidate for bariatric surgery.

To be considered, you must be 100 pounds or more over your ideal body weight with a BMI of 40 or greater. Surgery may also be an option for patients who are less than 100 pounds above ideal weight but have a BMI of 35 to 39.9 and who have other serious health conditions. These conditions are referred to as comorbidities and can include type 2 diabetes, heart disease, high blood pressure, respiratory problems, arthritis, sleep apnea, heartburn and reflux, gallbladder disease, depression, infertility, skin breakdown or ulcers and circulation problems. Treating the obesity will often improve or eliminate the comorbidities.

Bariatric surgery promotes weight loss by restricting food intake or a combination of restrictive food intake and interrupting the digestive process. As in other obesity treatments, the most successful results are achieved by adopting healthy eating behaviors and getting regular physical activity.

Surgery options – At Garnet Health Medical Center, we offer three types of bariatric procedures:

- Laparoscopic/Robotic Gastric Band
- Laparoscopic/Robotic Sleeve Gastrectomy
- Laparoscopic/Robotic Roux-en-Y Gastric Bypass

A. Restrictive operations

One of the restrictive operations for obesity performed at Garnet Health Medical Center is the Laparoscopic Adjustable Gastric Banding (LAGB). The other is the Sleeve Gastrectomy.

Restrictive operations restrict food intake but do not interfere with the normal digestive process. These operations promote weight loss by restricting the amount of food the stomach can hold.

Laparoscopic Adjustable Gastric Banding

During Laparoscopic Gastric Banding, a hollow band is placed around the stomach near its upper end and is filled with a salt solution. This band can be tightened or loosened over time by increasing or decreasing the amount of salt solution, changing the size of the narrow passage from the smaller stomach pouch to the larger stomach pouch below it. The band delays the emptying of food from the smaller pouch to the larger pouch below it. This helps retain a feeling of fullness.

Sleeve Gastrectomy

Another restrictive operation available is Sleeve Gastrectomy, which removes approximately 75% of the stomach. The creation of a smaller stomach (about 70 cc's in size) coupled with a significant decrease (90%) in the release of ghrelin hormone (hunger hormone) results in less food consumption, causing you to lose weight. Following the surgery, what remains of the stomach is a narrow tube or sleeve that connects to the intestines. There are no nutritional deficiencies as a result of a Sleeve Gastrectomy because it does not affect the absorption of food, and the intestines are unaffected as well.

Most people who elect to have a restrictive surgery can no longer eat large amounts of food at one time. Although amounts vary, usually the person can eat only up to one cup of food without discomfort or nausea. It is very important that food is well chewed.

B. Restrictive and malabsorptive operations

Restrictive and malabsorptive operations both restrict food intake and inhibit the normal digestive process. Restricting the amount of food a person can eat and reducing the body's ability to absorb calories promotes weight loss. The malabsorptive operation for obesity is the Laparoscopic Roux-en-Y Gastric Bypass.

Gastric Bypass – Roux-en-Y Gastric Bypass (RYGB) – RYGB is the most common malabsorptive surgery used today. This procedure begins with the creation of a small stomach pouch to restrict food intake. Then, a section of the small intestine is attached to the pouch. The new digestive tract bypasses the lower stomach, the duodenum (the first segment of the small intestine) and the first portion of the jejunum (the second segment of the small intestine). This bypass reduces the amount of calories and nutrients the body absorbs.

C. Laparoscopic or robotic procedures

Weight-loss surgery is performed laparoscopically or robotically through a set of small incisions in the abdomen. Compared to traditional (open incision) surgery, laparoscopic and robotic surgery patients experience less pain, fewer wound complications, fewer pulmonary and cardiac abnormalities, quicker recovery, a quicker return to normal activity and the smaller incisions generally result in a better cosmetic appearance. Additionally, robotic surgery provides your surgeon with a greater range of motion and precision. In the few instances where doctors experience a complication, the operation is done with an open incision along the length of the abdomen.

III. Risks

Our doctors take the utmost care to ensure a successful operation. However, it is important to realize that all surgical procedures have associated risks as well as benefits. Although complications are infrequent, you should fully understand the risks involved with surgery in order to make an informed decision. The following is a partial list of information concerning the risks connected with bariatric surgery. Additional information is available from your surgeon. Our experienced surgical team will avoid complications as much as possible. If a problem does occur, the surgical team and the nursing staff, with your cooperation, will attempt to solve the problem quickly. Some complications may result in an extended hospital stay and recovery period. The importance of having a highly qualified medical team cannot be overstated.

Anesthesia – Modern anesthesia is very safe. Extremely sensitive monitors used during surgery have greatly reduced the associated risks of anesthesia. Our sophisticated monitoring system makes recognition and treatment of problems with anesthesia almost immediate. During the

procedure, the anesthesiologist spends all of his or her time ensuring your safety. Any significant changes in blood pressure, heart rate or other vital functions are treated immediately. To protect yourself from the dangers of vomiting during surgery, do not eat or drink anything after midnight prior to your procedure. Your anesthesiologist will discuss the specific risks of general anesthesia with you before your surgery.

Infection – Our operating rooms are maintained as highly controlled, sterile environments to help guard against infection. The meticulous, efficient surgical technique of our doctors and staff further reduces the likelihood of infection. Your primary care physician will establish that you are free from any conditions such as bladder infection, COVID-19, sinusitis or skin infection during your pre-operative exam. These types of infections may necessitate the cancellation or postponement of your surgery until the infection has been resolved. Notify your doctor immediately regarding any suspected infection discovered during your pre-operative exam so antibiotics can be initiated if needed. If you develop any symptoms between your pre-operative visit and your day of surgery, notify your doctor immediately.

Blood clots – Alterations in blood flow that occur during surgery are associated with the risk of blood clots, also known as deep venous thrombosis or DVT. These clots most commonly form in the legs. When a clot travels to the lungs, it is referred to as a pulmonary embolism. We use blood-thinning drugs known as anticoagulants to reduce the risk of clot formation. Using compression boots in the hospital will further reduce this risk. Moving and exercise after surgery will help to prevent blood clot formation and embolism.

Pneumonia – Following surgery, some patients may not fully expand their lungs. This and immobility are the most common causes of post-operative pneumonia.

Respiratory rehabilitation is therefore a key component of your recovery. Coughing, breathing exercises and the use of devices such as an incentive spirometer will help keep your lungs clear.

Myocardial infarction – Heart attacks can occur in a very small percentage of weight-loss surgery patients. If you are considered at risk, your surgeon's office will refer you for a screening by a cardiologist. You will have an echocardiogram and a stress test to evaluate your risk. It will be necessary for you to be cleared by a heart specialist and deemed stable enough to undergo surgery.

Bleeding – Your surgeon will do everything he or she can to prevent damage to nearby tissues and blood vessels during your procedure. This includes the use of precision tools, guides and highly refined surgical techniques. There is a possibility of internal bleeding, but rarely does the patient require re-operation or a blood transfusion.

Strictures – Narrowing along your new digestive tract may occur from the formation of scar tissue or the inflammation of nearby tissues. This narrowing can result in a stricture, preventing food from progressing through the digestive tract. If you experience persistent vomiting, this could be a sign of a stricture. You should call your surgeon promptly. An endoscopy may be used to diagnose and treat a stricture.

Intestinal obstruction – Scar tissue and internal hernias may cause intestinal obstruction. Obstructions are sometimes diagnosed using an Upper GI X-ray series and may require additional surgery.

Infarction – A loss of blood supply to the intestines may occur following surgery. This may require further surgery to prevent damage to internal organs and tissues.

Hernia – An incisional hernia occurs when tissues at the site of your incision become weak, creating a pocket for underlying structures. Your surgeon will take care to

suture these underlying tissues as well as your skin layers.

Leaks – A risk of Adjustable Gastric Banding includes saline leakage. A risk of Sleeve Gastrectomy is when a leak occurs at the staple line. A risk of Roux-en-Y Gastric Bypass is when a leak occurs at the anastomosis (connection between the new proximal pouch or the small intestine). Leaks may require an operation (in some cases, an emergency operation) to correct.

Vitamin deficiency – Bariatric operations carry a risk for nutritional deficiencies. To combat these deficiencies, all patients must take a high-potency multivitamin supplement daily for the rest of their life. Malabsorptive procedures carry a higher risk than restrictive surgery because the procedure causes food to bypass the sections of the digestive tract where most iron and calcium are absorbed. Calcium deficiencies can also bring on osteoporosis and metabolic bone disease. It is recommended that you take 500 mg of calcium citrate two to three times per day to ensure proper absorption of calcium. Calcium carbonate is not readily absorbed after bariatric surgery and is not recommended; calcium citrate is the preferred form. Menstruating women may develop anemia when not enough vitamin B12 and iron are absorbed. B12 deficiency can develop quickly with little warning and can become very dangerous. It is important to have your vitamin levels checked regularly by your medical team.

Ulcer – After gastric bypass, stomach acids produced for digestion are still present and patients are predisposed to ulcers. You will be required to take antacid medications for a period of time following surgery to prevent ulcers. Smoking and nonsteroidal anti-inflammatory drugs also increase the risk of ulcers and must be avoided.

Further risks of Adjustable Gastric Banding include band slippage and band erosion. These are infrequent but can occur.

Weight-loss surgery preparation class and support groups

Preparation for surgery and recovery is an important part of your care. For this reason, your attendance at a pre-surgical education class and support groups are necessary. The class and support groups will give you a better understanding of what to expect before, during and after surgery. It is important that you attend one of these classes and a minimum of two support groups pre-operatively.

The pre-surgical education class includes a review of bariatric surgery, as well as pre-surgical and post-surgical information, instructions and nutritional information. The support groups will give you the opportunity to meet other patients and learn about the behavioral aspects and behavior-modification techniques necessary to fuel your weight-loss success.

To register for a class, or to find out more about attending support groups, please call 1-888-321-6762.

Preparing for surgery

Now that you have decided to proceed with surgery, there are certain steps to take before your operation to ensure that you are ready.

Blood donation

Very rarely, during or after surgery, you may need a blood transfusion. Garnet Health Medical Center stocks blood, blood products and plasma expanders and has them available should you need them.

Although not required, one alternative to the use of these products is donation of your own blood prior to surgery, known as autologous donation.

Donor-directed blood is also an option; a family member or friend may donate blood on your behalf if you have a medical condition that makes it difficult for you to donate for yourself. Your doctor's office will fill out and fax information to the blood center and give you a copy. You will need to schedule your own appointments. Two appointments are required. There are three blood center locations available to you: NY Region Community Blood Services in New Windsor and Warwick (845-220-2030) and Hudson Valley Blood Services in Westchester (1-800-843-2566).

Pre-surgical testing (PST)

An appointment for PST will be made by your surgeon's office. This appointment will be scheduled from approximately one week to up to one month before your scheduled surgery. During this appointment, required tests will be done and further information will be obtained.

Bring your list of medications with you.

For bariatric surgery, your physician's office will inform you where to report.

If you are ill before surgery

It is important that you be in the best possible physical condition for surgery. Should you experience any changes in your condition during the days before your surgery, please immediately notify the physician who medically cleared you for surgery. These changes include, but are not limited to, developing a cold, persistent cough or fever. Any health issues could necessitate a re-evaluation for surgical readiness.

Insurance verification

Our Pre-Registration Department will be calling you a few days after your final surgery date is scheduled to verify your insurance and personal information. If you have questions regarding the pre-registration process, please call (845) 342-7120 between 7:00 a.m. and 7:00 p.m., Monday through Friday.

Medication

Be sure to inform your doctor of ALL your medications, whether prescribed or over-the-counter.

To minimize the risk of blood loss during and after surgery, you will be asked to stop taking certain medications. Aspirin, ibuprofen, blood thinners, Plavix, some anti-arthritis medications, diet pills and MAO inhibitors are a few medications that can cause increased bleeding. Some over-the-counter herbal therapies such as ginkgo and supplements such as vitamin E also affect blood clotting. You should stop taking these types of medications approximately seven to 10 days before your surgery. Some drugs such as Nardil need to be stopped three weeks before surgery. You will be instructed as to when you should stop taking certain medications. You will also be instructed on which of your routine medications you will need to take the morning of surgery. Tylenol is OK to take.

Smoking

In preparation for your surgery, it is required that you do not smoke. If you are a smoker, ask your doctor what would work best for you to help you quit smoking. The longer you are smoke-free, the healthier your lungs will be. Smoking will increase your surgical risk.

Exercise

Keeping your muscles toned will help you recover faster after surgery. Be sure to follow the exercise program you have been given by your doctor or exercise specialist.

Pre-operative diet

The liver is the organ in your body that metabolizes stored fat. Your liver may be markedly enlarged due to excess fat accumulation. The purpose of this pre-operative diet is to decrease the size of your liver, allowing it to perform its job more efficiently. Your insurance company may require you to lose 5% to 10% of your body weight before surgery. Research has demonstrated potentially better outcomes both surgically and in weight-loss success in patients who lose 5% to 10% of their body weight before surgery.

The bariatric dietitian can provide you with a pre-operative diet to assist you in losing the required amount of body weight, or you can follow the meal plan indicated below. Do not regain weight lost prior to surgery, as this will cause the size of your liver to grow. Instead, gradually lose the excess weight required.

Start immediately by cutting out all snacks and eating three solid, healthy meals each day. After two weeks, substitute breakfast with one protein shake per day, and eat a light lunch and a light dinner (no snacking). Follow this diet for two weeks and then start the diet listed below.

Breakfast: 1 protein shake

Snack: Lots of water and low-calorie beverages

Lunch: 1 protein shake

Snack: 1 piece of fresh fruit and lots of water

Dinner: 1 (3- to 4-ounce) portion of lean meat (chicken, turkey, fish), 1 cup of steamed vegetables and 1 bowl of salad with vinegar or a low-calorie, low-carb dressing (must be less than 30 calories per serving)

Snack: Lots of water



Discharge planning – The plan for your discharge begins with your decision to have surgery. Our goal is for you to recover as soon as possible in the comfortable surroundings of your own home. You and your healthcare providers will establish an individualized plan of discharge.

The day before your surgery – If you are scheduled to have a gastric bypass or Sleeve Gastrectomy, you are to remain on a clear liquid diet for 24 hours before the surgery. If you are having a gastric band placement, continue to follow the pre-operative diet.

The evening before your surgery – A hospital representative from the Same Day Surgery Desk will call before 5:00 p.m. to tell you the time to report to the hospital in the morning.

The night before your surgery – DO NOT eat or drink anything after midnight. This includes water, hard candy and gum.

The morning of your surgery – Take ONLY the medications you were instructed to take by your physician and/or PST nurse. Take these medications with a small sip of water.

- You may shower and brush your teeth. Do not swallow water.
- Do not use perfume, deodorant, powders, creams, make-up or nail polish.

What to bring to the hospital – We recommend that you bring only the bare necessities to the hospital. Do not bring any valuable items, jewelry or more than \$20 in cash. You may want to bring a few personal items and a picture of a family member, friend or pet to help you relax.

There are a few other things that may make your stay a little more comfortable:

- This guide
- Your insurance card
- A copy of your living will/advanced directives
- A list of medications you are taking
- Your mask for your CPAP or BIPAP machine, if you use one, unless otherwise instructed not to bring your mask in.

- Small overnight bag with toiletries such as toothbrush, toothpaste, soap, shampoo and lotion
- Bathrobe
- Eyeglasses and an eyeglass case; NO contact lenses
- Address and phone book of loved ones
- Lip balm
- Flat shoes with good tread such as athletic shoes
- Comfortable, loose-fitting clothes to wear home. Clothes that are easily removed and easy to slip on are best
- Items that might help you relax, such as a personal music device and headphones

To avoid possible loss, please have your family take your personal belongings with them while you are in surgery. They can be returned to you once you are in your hospital room.

Your surgical experience

Day of surgery

Arrive at Garnet Health Medical Center at 707 East Main Street in Middletown on time.

Hospital admitting procedures – Report to the admission desk on the first floor. You will be escorted to the surgical waiting area.

- You will be taken to your pre-operative room in the Same Day Surgery Unit and asked to undress and put on a hospital gown.
- Your family/friends will be asked to wait in the Same Day Surgery waiting area while the nurse prepares you for surgery.
- Your pre-operative nurse will start your intravenous (IV), ask questions and perform a physical assessment.

- You will be given IV antibiotics at this time.
- Your family/friends will be allowed to join you while you wait to go into surgery.

When you are transferred to the operating room, your family/friends may wait in the surgical waiting area on the first floor. Refreshments are available in the coffee shop or the cafeteria. The cafeteria is on the ground floor.

- If your family/friends plan on leaving the hospital, they should notify the Same Day Surgery nurse and provide contact information.
- You will be given a card with your individual patient identification number. Give this number to your family/friends so they may get information about you over the phone. Without this number, information about you will not be given to anyone.

Recovery – Post-Anesthesia Care Unit (PACU)

- After your surgery, you will be brought to the PACU, where you will be closely monitored as anesthesia wears off.
- The nurses will monitor your blood pressure, pulse and respirations; assess and manage your pain; monitor your IV intake, urine output and your dressings; and encourage you to deep-breathe, cough and move your feet and ankles.

Your post-surgical experience

When you are ready to leave the PACU, you will be transferred to a bariatric room.

Intravenous fluids and medications

You will receive IV fluids until you are able to eat and drink without nausea or until your doctor feels you are ready.

Your IV access may also be used for IV pain medication.

Drainage tubes

Although uncommon with a gastric bypass or Sleeve Gastrectomy, a drainage tube may be inserted into your abdomen during surgery. This allows fluid to be collected and measured after surgery. Once you begin to ambulate, the drain and collection device will be removed, usually by the second day after your surgery.

With gastric bypass or Sleeve Gastrectomy, a urinary catheter may be inserted into your bladder during surgery while you are sedated. This helps our doctors monitor how well your kidneys are working. The catheter is usually removed by the first day after your surgery.

Sequential-compression boots

Sequential-compression boots inflate and deflate automatically, simulating muscle activity that occurs when walking. This assists in the prevention of blood clots, or what is known as a deep vein thrombosis (DVT). These compression boots are worn while you are in bed, until you are fully ambulatory.

Oxygen

After surgery, you may receive oxygen through a tube (nasal canula) under your nose. This is usually supplemental (unless you have other respiratory difficulties) and is common practice during the post-operative period. A monitor, called an oximeter, may be placed on your finger periodically to measure the amount of oxygen in your blood. Continuous monitoring of your breathing will occur through a sticky pad on your neck until discharge. This pad is connected to a monitor that will alert staff if your breathing falls below a desired level.

Blood transfusion

If your blood count is too low, your surgeon may decide that you need a transfusion.

Anticoagulation

Prevention of clotting is extremely important after bariatric surgery. Different medications are used for anticoagulation. These medications may be injected or taken by mouth, depending on the type of anticoagulant your physician orders. After gastric bypass or Sleeve Gastrectomy, your blood will be drawn daily, and your anticoagulation therapy will be adjusted according to these results if you are on an oral blood thinner. If you are on anticoagulation medication during your hospital stay, your doctor will prescribe this medication, or a substitute, upon discharge.

Pain control

Your report of pain is very important in the management of your post-operative recovery. You will be asked to rate the intensity of your pain through the use of a pain scale of 0–10 (0 is no pain; 10 is severe pain). You will also be asked what your acceptable pain score is. Knowing that, post-operatively, zero is not attainable, a score of two or three is an attainable and acceptable score for most patients. Once you have attained your acceptable level of pain, it is best if you obtain medication again when your pain level starts to rise. Do not allow your pain to get severe. Treat the pain as it begins to increase. Clinical practice proves that if you maintain pain control, it takes less medication and less time to manage the pain.

Relaxation and diversion are also helpful in decreasing pain. Bring a personal music device and headphones to help you relax.

Pain medication is available in various forms: intravenously, by injection into the muscle or subcutaneous tissue; epidural; or by mouth.

Oral pain medication

You will be given oral pain medication when you no longer need IV or injections for pain control and your diet is advanced to oral intake.

It is best to request oral pain medication when your pain level starts to increase. Remember not to wait until the pain is severe. Keep in mind that it takes about 20 to 30 minutes for oral pain

medication to start working and it also takes time for the nurse to check your chart and obtain the medication. The sooner you request pain medication when your pain starts to increase, the better you will help us manage your pain.

Coughing and deep breathing

You will be encouraged to take deep breaths and cough after your surgery. This exercise will help keep secretions in your lungs from accumulating. When fluids accumulate, it can cause pneumonia or a condition called post-operative atelectasis. You will be given a device called an incentive spirometer to help with deep breathing. It is best to use it five to 10 times every hour when awake for the first few post-operative days. Make yourself cough after each use. The respiratory therapist or nurse will show you how to use it.

Constipation

Constipation often occurs when you are taking pain medication and are less active, as in your post-operative period. Drinking plenty of water and allowable fluids is helpful in preventing constipation. If you do not have a bowel movement by the third day after surgery, please let your nurse or doctor know.

Managing symptoms

Report any symptoms of nausea, anxiety, muscle spasms, increased pain or shortness of breath to your nurse immediately.

It is normal to experience certain symptoms, to varying degrees, in the early days and weeks after surgery. Fatigue, surgical pain, nausea and vomiting, weakness and lightheadedness, sleeplessness, loss of appetite, gas pain, flatus, loose stools and emotional ups and downs can occur. You should discuss specific medical concerns with your surgeon or physician. Our staff will answer questions, give you encouragement and provide the emotional support you need.

Mobility

After gastric band placement, bypass surgery and Sleeve Gastrectomy surgery, you will be walking within a few hours.

Length of stay

In most cases after Laparoscopic Gastric Band placement, you will be discharged on the same day or after an overnight stay. The average length of stay after Sleeve Gastrectomy is one day and after laparoscopic gastric bypass one to two days.

Going home

Your surgeon will determine your date of discharge based on your individual progress. Specific dietary and activity instructions, along with precautions and situations when your surgeon should be notified, will be reviewed with you before you are discharged. Garnet Health Medical Center will prepare you for your trip home based on your needs. Concerns or questions about your living environment should be shared with the staff prior to your discharge.

Preparing your home

Following a few basic steps to equip your home for your return may ease your recovery. Try several protein shakes to find one you like for use after surgery. You should have this available when you get home. Prepare a phone list with important numbers, including members of your support network. If you live alone, ask friends to check on you during your first few days home.

Follow-up care

Your first follow-up appointment will be scheduled with the surgeon's office prior to your hospital stay, or you should call to set up your first follow-up upon your return home.

Following your discharge, we will contact you to check on your progress, and you will be seen by your surgical team on a periodic basis. Subsequent appointments will be scheduled for you at the surgeon's office, where you may receive referrals for additional follow-up appointments with the bariatric dietitian or behavioral therapist. Don't hesitate to call your surgeon's office or your primary care physician with any medical concerns between scheduled visits.

Urgent symptoms to report

Contact your surgeon immediately if you experience any of these symptoms:

- Fever of 100.5°F or above
- Yellow/green and/or odorous wound drainage with or without puss
- Chest or shoulder pain
- Rapid breathing or pulse over 120
- Shortness of breath
- Leg pain or swelling
- Vomiting for more than one hour
- Night sweats
- Diarrhea past the seventh post-surgery day
- Hiccups or abdominal pain over a two-hour duration
- Prolonged fatigue
- Bladder infection
- Urine output fewer than four times in 24 hours
- Any other unusual symptoms

Common problems and their solutions

Discomfort and pain

- It is normal to experience mild to moderate discomfort or pain after any surgery.
- If the pain becomes severe and is not relieved by pain medication, please contact your surgeon.
- Avoid non-steroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen, aspirin, ketoprofen and naproxen. These types of pain relievers can irritate your stomach after surgery.

Nausea – Nausea may be associated with fullness, sensitivity to odors, pain medication, not eating, post-nasal drip and/or dehydration. Another kind of nausea may follow the gastric bypass from delayed function of the Y-limb during the first few

days or weeks. This should resolve itself with time. If you experience this type of nausea, it is very important to suppress it with medications called antiemetics. Persistent vomiting can lead to dehydration and electrolyte imbalance, and can cause vitamin deficiencies to occur by preventing you from ingesting the required supplements.

Vomiting – Vomiting is often associated with inappropriate eating habits. After gastric restriction, if you continue to eat after you feel full, chances are an episode of vomiting will result. This may occur several times, and most patients quickly learn to follow instructions to eat slowly, chew food well and to stop when fullness occurs. A few minutes after you reach a feeling of fullness, gastric bypass patients typically feel a profound feeling of satisfaction, making further eating a matter of indifference. If you experience vomiting that continues beyond one hour, stop eating solid foods and sip clear liquids (clear and very diluted juice, broth and herbal tea). Contact your surgeon if you have difficulty swallowing foods or keeping foods down. Vomiting may indicate that the stomach pouch is blocked. If vomiting continues for more than one hour, contact your surgeon. Continued vomiting can lead to severe dehydration and should be taken seriously.

Dehydration – Dehydration will occur if you do not drink enough fluids. Symptoms include fatigue, dark-colored urine, dizziness, fainting, lethargy, nausea, lower back pain and a whitish coating on the tongue. If you believe that you may be dehydrated, contact your surgeon immediately. In some cases, you may need to be admitted to the hospital so that fluids can be given intravenously. If you have difficulty drinking due to nausea, suck on ice chips, popsicles or sip protein drinks.

Bowel habits – After bariatric surgery, it is not unusual to have one to three bowel movements of soft stool per day. It may be foul smelling and associated with flatulence, and some patients experience diarrhea for a few months. Most of these changes should resolve within the first year after surgery as the intestines adapt. Lactose intolerance and high-fat intake are generally

the culprits of loose stool and diarrhea. Avoid all high-fat foods and discontinue the use of all cow's milk products (yogurt is OK). If loose bowel movements continue, consider what you are eating and eliminate fruits and juices. Adding fiber supplements (unsweetened) to your diet will add bulk to your stools and keep you regular. If cramping and loose stools (more than three per day) or constipation persist for more than two days, please call your surgeon's office. After restrictive surgery, the quantity of fiber or roughage consumed may be much smaller because the amount of food consumed is greatly reduced. As a result, the amount of bowel movements will be diminished, causing less frequent bowel activity, and sometimes constipation. A stool softener may be needed if this becomes a problem.

Flatulence – Everyone has gas in the digestive tract. Gas comes from two main sources: swallowed air and the normal breakdown of certain foods by bacteria that is naturally present in the large intestines. Many carbohydrate foods cause gas; fat and protein cause very little. The foods that are known to cause more gas are beans, vegetables, some fruits, soft drinks, whole grains/wheat and bran, cow's milk and cow's milk products, foods containing sorbitol and dietetic products. Eat your meals slowly, chew food thoroughly, avoid chewing gum and hard candy and eliminate carbonated beverages. If symptoms persist, try remedies such as acidophilus and simethicone products.

Lactose intolerance – Gastric bypass does not cause lactose intolerance, but it may unmask it. Lactose intolerance is the result of the body's inability to digest the sugar, known as lactose, in cow's milk. Lactose is commonly found in dairy-based foods and beverages, and is digested in the intestines by the enzyme lactase. Lactase breaks down lactose so it can be absorbed in the bloodstream. When the body does not produce enough lactase, lactose cannot be digested, which may result in lactose intolerance. Symptoms may vary, depending on the individual, and include cramping, diarrhea, bloating, gas and nausea.

Although there are lactose supplements that you can take, elimination of dairy is another approach to solving the problems associated with lactose intolerance.

Hernia – Weakness at the site of the incision may result in a hernia, sometimes felt as a bulge under the skin of your abdomen where the bowels are not being contained. Pain from a hernia may be associated with lifting a heavy object, coughing or straining bowel movements or urination. The pain may be sharp and immediate, or it may be a dull ache that gets progressively worse toward the end of the day or after standing for a long period of time. You can minimize the risk of developing a hernia by avoiding heavy lifting for three months after surgery. Surgery is the only fix for a hernia. If the hernia bulges out and will not go back in when you lie down, and it is associated with severe pain and vomiting, it may result in an emergency. **Call your surgeon's office or your primary care physician.**

Yeast infections/thrush – The large amounts of antibiotics taken around the time of your surgery may rarely result in a yeast overgrowth in your mouth known as thrush. Symptoms of thrush are a white, cottage-cheese like coating on your tongue, or the tongue could also become very red and inflamed. Call your primary care physician if you have an oral or vaginal yeast infection or a rash on your skin. You can reduce this problem by taking acidophilus in addition to the prescribed regimen post-operatively.

Anemia – Watch for the signs of anemia, including pallor, weakness, fatigue, dizziness and shortness of breath. If you are a menstruating female, your surgeon will discuss taking an iron supplement in order to prevent anemia.

Transient hair loss – Since calorie intake is much less than the body needs, and protein intake is marginal, hair thinning or loss is expected after bariatric surgery. When nutrition and weight stabilize, this transient effect should resolve on its own. To minimize hair loss, take your multivitamin daily and consume at least 60 grams of protein per day. Your doctor may

recommend additional supplements of zinc and biotin as needed. We advise patients to avoid hair treatments and permanents. If symptoms persist, ask your doctor for an alternative hair treatment.

Swelling and bruising – Moderate swelling and bruising are normal after any surgery. Severe swelling and bruising may indicate bleeding or possible infection. Notify your surgeon immediately if this occurs.

Numbness – Small sensory nerves to the skin may be temporarily interrupted at the incision or by the underlining of the skin during surgery. The sensation in those areas will gradually return, usually within two to three months, as the nerve endings spontaneously heal. Be especially careful not to burn yourself when applying heating pads to numb areas.

Itching – As the nerve endings around the surgical area heal, you may experience itching and occasional small, shooting, electrical sensations within the skin. These symptoms are common during the recovery period. Ice, skin moisturizers, vitamin E oil and massage may be helpful.

Redness of scars – All new scars are red, dark pink or purple and should take about a year to fade. We recommend that you protect your scars from the sun for a year after your surgery. Sunlight that reaches the skin can cause damage, even through a bathing suit. Wear a sunscreen with a skin-protection factor (SPF) of at least 15 when out in sunny weather.

Specific recovery instructions

You will be restricted from strenuous activity for three to six weeks after the operation. To help prevent blood clots from forming in your legs, it is important that you change positions frequently while sitting and when standing. Avoid lifting anything heavier than 20 to 30 pounds during the first six weeks. Limit your activity to walking and light housework during this period.

Laparoscopic surgery patients are more frequently able to return to all activities within a shorter time frame. 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; 32 to 64 ounces a day is the recommended minimum intake. Carrying a bottle of water with you at all times will help you achieve this.

You may resume traveling short distances as soon as you feel strong enough to make the trip. Do not drive a motor vehicle until you are finished with all prescription pain medicines, usually about one week after your surgery.

Personal hygiene

You may require help with toileting due to the nature of abdominal surgery. Flushable baby wipes tend to be gentler for personal hygiene, as is a peri-bottle. You can use a small sports-top water bottle as well. A long sponge stick can also be very helpful.

Wound care

Usually, wounds from bariatric surgery require minimal care. Sutures dissolve on their own, eliminating the need to remove stitches. The pieces of tape on your wound, called Steri-Strips, will fall off by themselves.

Keep your wound clean and dry to promote faster healing. You may take showers, but it is important that you do not scrub the incision area dry. Thoroughly pat the area dry with a clean towel. Usually, you will be cleared for baths and swimming after about three weeks. Ask your surgeon if your wound is ready for immersion.

Any wound can become infected, even under the very best care. Signs of possible infection include, but are not limited to, swelling, redness, streaking, any type of drainage or puss, increased soreness or sensitivity or a fever of 100.5°F or higher. If you experience any of these symptoms, call your surgeon immediately. Topical antibiotic creams or other occlusive ointments should never be used on your incision.

Sexuality/pregnancy

You may resume sexual activity when you feel physically and emotionally stable. It is important to realize that fertility may be increased with

weight loss and oral contraceptives may not be fully absorbed. It is imperative that women use a mechanical form of birth control for the first 18 months following surgery.

Despite possible infertility before surgery, you are more likely to conceive now. The fatty tissue in many severely obese women soaks up the normal hormones and makes some of its own as well. This confuses the ovaries and uterus, and causes infertility through a lack of ovulation. However, as weight loss occurs, this situation may change quickly.

Due to the rapid changes your body will be undergoing following the operation, we recommend you delay pregnancy until your body has adjusted and adequate nutrition has been established. It will be necessary to use a condom or a diaphragm to prevent pregnancy; hormones such as oral contraceptive pills or Depo-Provera shots are not reliable forms of birth control during the first 18 months of such rapid body change. You may start planning a pregnancy only after 18 months to maximize the health and safety of both you and the baby.

Other important information

- If you have any surgical procedures following your bariatric surgery, inform the physician that you have either a gastric band, Roux-en-Y gastric bypass or have had a Sleeve Gastrectomy.
- Carry your implant identification card with you, especially when you are traveling.
- Carry a medic-alert card with your name, date of bariatric surgery, and type and the name of your bariatric surgeon and phone number in case of emergency.
- You will most likely return to all your normal activities about two to four weeks after surgery.

Diet

Nutritional expectations

You will need to change your eating patterns after bariatric surgery. You will start with a liquid diet, and then progress to either a pureed diet or a soft diet and finally, to a modified regular diet. This progression will allow your body to heal properly and ensure your nutritional needs are met at each stage. You will receive specific diet instructions during the pre-operative education class and pre-operative consultation with our bariatric dietitian. It is imperative that you follow the diet's progression to maximize healing and minimize the risk for unnecessary complications.

Immediately following gastric bypass surgery, the size of your stomach pouch is about 1 ounce or one to two tablespoons. At first, it may take only two to three teaspoons of food to fill you up. By six months after surgery, your stomach pouch may stretch to 8 ounces or one cup. Long term, the size of your pouch is likely to be eight to 12 ounces or one to 1½ cups. This will limit the amount of food you can eat at one time.

Following Sleeve Gastrectomy, you will also feel restriction. Initial food intake will be similar to gastric bypass after three to six months. Following gastric banding placement, you may feel some restriction. The feeling of restriction will increase with each subsequent “fill” or “adjustment” you have. With greater restriction, the gastric emptying time of food is slowed and you will feel fuller on less food and for a longer period of time. You must allow time to heal before you have your first adjustment, which may occur approximately six weeks after your band has been placed.

Eating techniques: “slow, small, moist and easy”

It is absolutely CRITICAL that you eat slowly and chew your food well. Swallowing food in chunks may block the stomach and prevent foods from passing into the intestine. You may find the following tips helpful:

- Set aside 30 minutes to consume each meal.
- Cut food into dime-sized pieces on your plate.
- Chew your food 20 times with each bite. (Ground or soft foods may be necessary if you have dentures.)
- Do not allow friends and family to urge you to eat faster. Explain to them why you must eat slowly.
- Take small bites of food (if not cut up). Using a saucer in place of a plate may help you with portion control.
- Learn how to savor the taste of your food.
- Stop eating as soon as you are full.
- Remember to eat your protein first to ensure adequate amounts before becoming full.
- Stop drinking 30 minutes before eating; do not drink at all during your meal; wait 30 to 45 minutes after eating to resume drinking.

Recognizing fullness

Changes in your digestive tract may change the way your body indicates fullness. Signs that your pouch is nearly full may include a feeling of pressure or fullness in the center of your abdomen, just below your rib cage, or feelings of nausea, regurgitation or heartburn. Overeating even one ounce can make you vomit and can lead to stretching your pouch if you have had a bypass or sleeve. Remember to stop eating at the first sign of fullness.

Exercise

Please follow the exercise plan that your doctor and/or physical therapist or exercise specialist has established for you. Your recovery process and continued health depend on good nutrition, rest and proper exercise.

Walk before you run

Upon your return home and for the next three to six weeks, you will be restricted to no strenuous activity. In fact, only light household duties and walking are recommended at this stage. At first, your body will tolerate shorter, frequent walks better than one or two longer walks that push you to the point of fatigue. Increase the distance of your walks gradually. By your six-week office visit, you should be walking two miles a day or more on a regular basis. A water exercise program is preferred if you have specific problems with weight-bearing joints. Water exercise can begin about three weeks after surgery.

Starting an exercise program

You must incorporate exercise into your daily routine in order to receive the maximum benefits from your surgery. If it has been some time since you have exercised regularly, we recommend that you start slowly. Begin with as little as five minutes a day and add five more minutes per day each week until you can stay active for 30 minutes per day.

There are three forms of exercise: cardiovascular, strength building and flexibility.

Cardiovascular exercise – This type of exercise uses your large muscles and raises your heart rate to a level where you begin to sweat but can still talk. Walking, jogging, swimming and cycling are good examples of cardiovascular activity. Participating in cardiovascular exercise for four or more days a week for 30 to 45 minutes or longer is essential for weight loss.

Strength-building exercise – Lifting weights or using equipment that requires resistance or weights is strength-building exercise. This type of exercise will make your muscles and bones

stronger and increase your metabolism. Regular strength training will help your body look leaner and help you lose fat. Strength-building exercises should be performed two to three times a week for best results. Always remember to warm up your muscles for five to 10 minutes before you begin any strength-building exercise.

Flexibility exercise – Stretching will help tone your muscles and can prevent muscle and joint problems later in life.

Your well-balanced exercise program should include exercise from each category. Remember to stretch before and after activity. Your muscles will need time to adjust to the new demands placed on them. Take a few minutes to warm up before engaging in strenuous activity. For example, walk on the treadmill for a bit before you run. Take a few minutes to cool down and lower your heart rate. Stretching again after exercise will improve flexibility and help prepare the body for your next workout. Always remember to drink plenty of water before, during and after your workout.

The walking workout

If you are new to exercise and you are also recovering from surgery, you can walk 10 to 20 minutes four or five days a week. As you get stronger, you can increase the distance and the speed to your comfort level. We recommend a walking program as the first type of exercise for both before and after surgery.

Water fitness

You can start water activities about three weeks after surgery. Water programs are non-weight bearing and therefore are gentle to painful joints. Water fitness can build strength, increase flexibility, improve cardiovascular health, decrease body fat, facilitate rehabilitation after surgery and enhance functional living.

Choosing a personal trainer

A qualified personal trainer can help you set realistic goals, determine strategies and provide motivation and the encouragement you need. Choose a personal trainer who is familiar with the special needs of morbid obesity, arthritis

and diabetes. Your trainer can work with your physician, physical therapist and with Bariatric Program Services to plan a safe, efficient program that will enable you to reach your health goals. Working with a personal trainer is one of the fastest, easiest, most successful ways to improve your health.

Emotional concerns

Considerations

You are likely to experience a range of emotions following surgery, which may include denial, anger, bargaining, depression, and finally, acceptance. Feelings of sadness and crying episodes may be common. Adapting to your changing body and your relationship to food can take many months. Expect to have ups and downs as the weeks go by.

Your adjustment will also be eased by the realization that bariatric surgery, with resultant weight loss, will by itself not solve your personal or relationship problems. You cannot expect a perfect body or a perfect life after the weight loss. In fact, many new problems will develop because of the many new opportunities. Try to be positive. As new challenges pop up, recognize them and develop a problem-solving approach.

In the past, one of the best methods for you to cope with life stress may have been for you to eat. This method will be detrimental to your health. New methods for coping will need to be learned and will take time.

Counseling

Emotional counseling may be needed while you adjust to your new physique and the many changes that follow the surgery for morbid obesity. We can recommend counselors who are qualified and experienced in working with people who have had weight-reduction surgery.

Family and friends

Your family and friends will have variable reactions to your surgical experience and the resulting weight loss. Many of your loved ones will likely be supportive and helpful during your ups and downs, but this may not always be the case. Friends and family may have become secure in your obesity and feel envious or threatened by your new courage and physical health. Be open about your appreciation of them. Recognize their ambivalence and talk with them about their own feelings. You may need to let people pull away for a while. Your main responsibility is to care for yourself. Hopefully, most close family members and friends will adjust.

Group meetings

Garnet Health Medical Center offers a Bariatric Support Group for pre- and post-surgery weight-loss surgical patients, as well as a bariatric support group blog on the bariatric home page of the hospital website. Support groups provide a wonderful opportunity to give and receive support and information with your peers. Group meetings allow pre-surgery patients to learn about the surgery firsthand from others who have had bariatric procedures. We provide periodic guest speakers to address obesity surgery-related topics. These meetings provide essential encouragement and can be an important part of both the learning and recovery processes.

The internet

Group support and staying connected to other patients can be vital to a successful surgical result. The internet is a way to help fill the void between group meetings. However, please be cautious about internet information sources. The bariatric support group blog on the Garnet Health Medical Center website is presented by our well-educated and reliable bariatric surgery team. You will find this to be a valuable resource.

Long-term success

Expected weight loss

Most patients experience fairly rapid weight loss in the first three to six months following surgery. Weight loss slows over time, but studies suggest that in the first two years, patients lose about 60% to 75% of their excess weight with the bypass procedure, about 45% to 50% of excess weight with the gastric band and 46% to 83% with the Sleeve Gastrectomy.

It is critical to adhere to the low-fat, low-sugar or sugar-free diet and exercise recommendations to maintain your weight loss.

Maintaining the weight

Bariatric surgery is a tool to help you lose weight. It is not automatic, and your post-surgery behavior plays a very large part in your outcome. It is your responsibility to choose a healthy diet, remain active and exercise daily and make psychological adjustments. You must also avoid snacking and grazing (continuous nibbling). Be sure to keep your regular office appointments so that your weight loss can be monitored.

Changes

Losing weight can prompt other significant changes in your body. You should experience increased energy levels, especially if you have continued a regular exercise program like walking. Your fatigue level should decrease and you should sleep better at night. Ongoing exercise is important for calorie burning, muscle tone maintenance and a sense of well-being.

Plastic surgery

After significant weight loss, you may notice excess skin folds and wrinkles. This is especially noticeable in areas where the greatest loss has occurred like the face, upper arms and abdomen. If you elect to have reconstructive surgery, you should wait until after the weight loss has stabilized, usually 18 to 24 months.

Lifestyle changes after bariatric surgery

Healthy success is in your hands

1. Drink fluids, but stop 30 minutes prior to eating and restart 30 minutes after eating
2. No fluids with meals
3. Drink 64 ounces of fluid per day once you are eating soft solids
4. Do not use a straw
5. Do not drink alcohol
6. Avoid caffeine
7. Avoid carbonated beverages
8. All food must be chewed to an applesauce consistency
9. Place utensils down between each bite
10. Chew food thoroughly, count your bites
11. Stop at the first sign of fullness
12. Always eat your protein first
13. Always eat nutritionally balanced meals
14. Take at least 30 minutes to consume each meal
15. Take daily vitamin and mineral supplements
16. Exercise for 30 minutes per day
17. Avoid high-fat foods and sweets

Conclusion

Successful weight-loss surgery is a positive step toward a healthier future. The benefits will begin to show while recovery is still under way. You can look forward to increased physical activity, travel, new social opportunities and a more positive self-image. Your newfound health may present opportunities for new career options and life goals. Even dining out will be more enjoyable.

By becoming an active participant in preparation and education, you can help achieve the best results from your surgery. Choosing to undergo any surgery can be unnerving; our healthcare

team understands you have questions and concerns. We are committed to helping you deal with those concerns. We view each patient as our partner, and like any partnership, we would never let you face this experience alone.

When you choose bariatric surgery with Garnet Health Medical Center, you can feel confident that our team of skilled professionals will strive to achieve the absolute best results for your surgery. And you can begin the first steps toward a healthier, more active life.



