Bariatric Surgery

Change is good.
Healthy change is better.

MEDICAL IMPORTANCE OF OBESITY

The medical importance of morbid obesity is that people who are very obese have higher rates of serious medical problems, such as heart disease, high blood pressure, diabetes, sleep apnea, premature death, etc. Weight loss is the most important long-term step for health that these patients can take. The serious nature of these weight-associated medical problems (called co-morbidities) means that serious measures (such as bariatric surgery) must be taken to control the weight. The medical complications of obesity may occur in overweight or mildly obese people but the frequency of these associated problems increases dramatically as weight increases.

Medical conditions that are commonly caused or exacerbated by obesity are outlined by organ systems:

- Pulmonary – Obstructive sleep apnea, obesity hypoventilation syndrome, asthma/reactive airway disease
- Cardiac – High blood pressure, heart failure caused by pulmonary hypertension, higher risk of coronary artery disease (atherosclerosis)
- Gastrointestinal, Abdominal – Gallbladder disease, GERD (recurrent heartburn), recurrent abdominal hernias, hiatal hernias, fatty liver (Non-alcoholic steatohepatitis and/or cirrhosis)
- Endocrine – Diabetes, hirsutism (excessive hairiness in women), hyperlipidemia, hypercholesterolemia
- Genito-urinary, Reproductive – frequent urinary tract infections (UTI's), stress urinary incontinence, menstrual irregularity or infertility (females), erectile dysfunction (males)
- Musculoskeletal – degeneration of knees and hips, disc herniation, chronic low back pain
- Skin – multiple disorders, most related to diabetes and infections between skin folds
- Central Nervous System – Pseudotumor cerebri
- Cancer risk – breast, uterine, prostate, renal, colon, pancreatic, gastric, gallbladder and endometrial cancer risk.

When other medically-supervised methods of weight loss have failed, bariatric surgery offers the best option of long-term weight control for those who are morbidly obese.

SETTING REALISTIC EXPECTATIONS

The goal of surgery is to help lose over half of your excess weight, in order to reduce or prevent health problems. Bariatric surgery is not cosmetic surgery. Keep in mind that:

- Other medically managed weight loss methods must be tried first and documented. Surgery is only an option if other methods have not been successful.
- Surgery is meant to be permanent. You will need to make lifestyle changes that will last for the rest of your life.
- Healthy food choices and an active lifestyle are necessary for a lifetime after surgery.
- Weight loss after bariatric surgery is not immediate. Most of the weight is lost steadily over the first 12 – 18 months after surgery.
- Weight loss surgery is just a tool to help with weight loss, not a "magic bullet". The three pillars to success are: choosing the right surgery for you, diligence with exercise, and healthy food choices. Your chances of losing more weight will dramatically increase if you adhere to these tenets.

THE NORMAL DIGESTIVE PROCESS

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 is pushed down the esophagus to the stomach, where strong acid continues the digestive process. The stomach can hold about three pints of food at one time. When the stomach contents move through the pylorus to the duodenum (the first segment of the small intestine), bile and pancreatic juices begin to break the food down into absorbable molecules. Most of the calcium and iron in the foods we eat is absorbed in the duodenum. The jejunum and ileum, the remaining two segments of the nearly 20 feet of small intestine, complete the absorption of almost all calories and nutrients. The food particles that cannot be digested in the small intestine are moved through the large intestine until eliminated.

PROMOTION OF WEIGHT LOSS AFTER BARIATRIC SURGERY

Weight loss surgery works either by limiting how much the stomach can hold, limiting how well nutrients are absorbed in the intestine, or both. Two ways surgical procedures promote weight loss:

1. Restriction – This is done by physically limiting the amount of food intake. Gastric banding, gastric bypass, and vertical sleeve gastrectomy are surgeries that limit the amount of food the stomach can hold by closing off or removing parts of the stomach.

   Note: The majority of patients report feeling full and satisfied after a small amount of food, and not feeling excessively hungry most of the time. If much more than a quarter cup of food is eaten at once, the patient will feel uncomfortable and may vomit.

2. Malabsorption – This works by altering how food is digested and absorbed. In the gastric bypass procedure, the surgeon makes a direct connection from the portion of the stomach to a lower segment of the small intestine, bypassing the duodenum and some of the jejunum. Other mal-absorptive procedures exist besides gastric bypass.

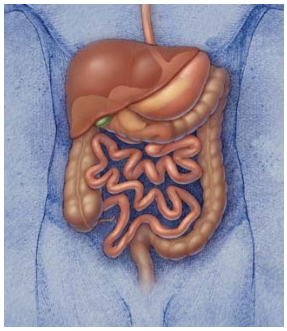
3. *Note: Vitamin and mineral supplements and a high protein intake will be required for life to prevent the problem of nutritional deficiencies. Although results of the operations using these procedures are more predictable and manageable, side effects persist for some patients.*

HOW IS SUCCESS DEFINED AFTER BARIATRIC SURGERY?

A common question for patients considering weight loss surgery is, "What is the best bariatric operation?" The simple answer is that the best bariatric operation is the one that is right for you. The reason there are multiple procedures performed for weight loss is that there is no one single procedure that is perfect for everyone. Each operation carries different risks, degrees of weight loss, and unique lifestyle changes that make it attractive for some patients and undesirable for others.

A common definition of "success" after weight loss surgery is loss of 50% of excess body weight. Excess body weight is simply the difference between a person's morbidly obese, pre-surgery weight and that person's ideal body weight. Ideal body weight can be determined by using the Metropolitan Life Insurance Company's weight and height tables. For instance:

Excess body weight = Pre-surgery weight – Ideal body weight



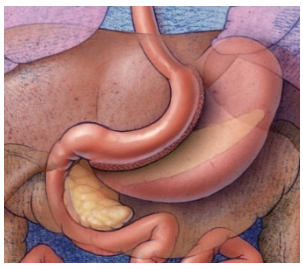
For a 300 lb. patient whose ideal body weight is 150 lbs., their excess body weight is 150 lbs. If that patient lost 75 lbs. after bariatric surgery, ending up at 225 lbs., that represents a 50% excess body weight loss. This is one definition of success after weight loss surgery.

Another definition of success is achieving a BMI of less than 30, thereby leaving the "obese" category.

PROCEDURES

Laparoscopic Vertical Sleeve Gastrectomy

The vertical sleeve gastrectomy (also called sleeve gastrectomy) is a stapling procedure in which approximately 80% of the stomach is removed. This results in a tubular stomach, or "sleeve", that will hold approximately 3-4 ounces of food or drink. The amount of stomach left behind is calibrated with a sizing tube, to ensure an evenly sized channel for food. Similar to other restrictive procedures, limiting the amount of food intake leads to an earlier feeling of satiety.



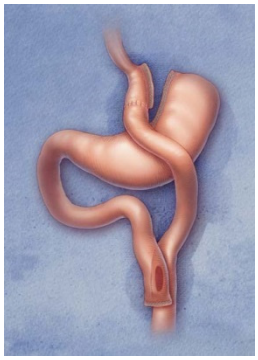
Additionally, the portion of stomach that is removed contains many of the cells in the body that produce a hormone called ghrelin, which is associated with the sensation of hunger. It is not clear how much effect a decrease in ghrelin levels has on postoperative weight loss, but some patients do report feeling less hungry after this (and other) weight loss procedures. Sleeve gastrectomy yields an excess body weight loss of 55-70% at 1 year. This procedure is not reversible; once the portion of stomach is removed, it cannot be put back into the body.

COMBINATION PROCEDURES

Laparoscopic Roux-en-Y Gastric-bypass

This procedure is regarded as a combination restrictive and mal-absorptive procedure. The name is often shortened to just “gastric bypass”. The upper portion of the stomach where food first enters is stapled and separated from the remainder of the stomach. This stomach “pouch” holds about 1 to 1½ ozs., limiting food intake by causing a feeling of restriction or fullness with a small amount of food. The small intestine is re-routed to accept food directly from this small stomach pouch. The remaining stomach, duodenum and the initial part of the jejunum stay in place and continue to make digestive juices, but are “bypassed”, resulting in less calorie absorption. However, because gastric bypass causes food to skip the duodenum, where most iron and calcium are absorbed, risks for nutritional deficiencies are higher. Anemia and fatigue may result from malabsorption of vitamin B12, and decreased absorption of calcium may bring on osteoporosis (loss of bone density) and metabolic bone disease. Iron supplementation may be required in menstruating women.

Patients are required to take life-long nutritional supplements that usually prevent these deficiencies. Gastric bypass patients may experience dumping syndrome, whereby high-calorie foods move too rapidly into the small intestine. Symptoms include nausea, weakness, heart pounding, sweating or flushing, faintness, and, occasionally, diarrhea after eating. Dumping syndrome is not a complication; it is a reminder that high calorie foods are detrimental after bariatric surgery. Roux-en-Y gastric bypass yields an estimated excess weight loss of 70-85% at one year. This procedure is considered irreversible, but in rare cases can be reversed for life-threatening medical need.



MALABSORPTIVE PROCEDURES *(DaVita Medical Group does not perform)*

Biliopancreatic Diversion with Duodenal Switch (BPD/DS) – The DS is more effective in achieving excellent weight loss in the extremely obese, but brings with it a higher rate of true malnutrition (malnutrition is very rare for those who undergo Gastric Bypass). In the DS, a sleeve resection of the stomach is per- formed by removing about 2/3 of the stomach, much like with the vertical sleeve gastrectomy. The small intestines are then arranged so that the section where the food mixes with the digestive juices is fairly short. Problems can arise with respect to the fat-soluble vitamins (Vitamin E, D, A, and K). Diarrhea and flatulence (gas) can also be prominent after DS.

Laparoscopic and Open Abdominal Surgery

There was a time when all abdominal surgery was done by making an incision large enough for the surgeon's hands to work and eyes to see. We call this "open surgery". Now, though, most patients are candidates for laparoscopic (pronounced lap-a-row-SKOP-ik) weight loss surgery. During laparoscopic abdominal surgery, the surgeon makes one or more small incisions on the abdomen to insert working ports, which range from the size of a pencil to the size of a highlighting marker. Carbon dioxide gas is used to inflate the abdominal cavity, and a video camera provides the surgeon a view of the organs. Small instruments are used through the working ports to perform complex surgery completely inside the abdomen! All of the procedures described here are generally done laparoscopically today.

OVERVIEW OF BARIATRIC SURGICAL PROCEDURES

	Procedure	Pros	Cons
Restrictive	Vertical Sleeve Gastrectomy	• No protein-calorie malabsorption • No vitamin or mineral deficiencies due to malabsorption • Lower risk of major complications than Gastric Bypass • No restriction of NSAID use	• Less effective with sweet eaters • Risk of staple line bleed or leak • Irreversible
Combination	Roux-en-Y gastric bypass	• "The Gold Standard" for weight loss operations • High rate of diabetes remission • Durable weight loss	• Higher risk of vitamin deficiencies than restrictive procedures • Risk of anastomotic leak
Malabsorptive	Biliopancreatic diversion & duodenal switch *(NOT performed at DaVita Medical Group)*	• *Greater sustained weight loss with less dietary compliance*	• *Increased risk of malnutrition and vitamin deficiency* • *Constant follow-up to monitor in- creased risk* • *Intermittent diarrhea and/or foul smelling stool*

RISKS OF WEIGHT LOSS SURGERY

We live in a world of risks. Every car ride, every plane flight, every decision we make carries risk. The risks of bariatric surgery are an important part of your decision for medical or surgical weight loss. Even doing nothing about your weight is a decision that carries some risk. The risks of morbid obesity are significant; each patient must realize the risk of complications from diabetes, heart disease, high cholesterol, sedentary lifestyle, and high blood pressure.

Some risks of bariatric surgery are common to all the procedures DaVita Medical Group offers. Other risks or side-effects are unique to one particular procedure.

RISKS OF EVERY BARIATRIC PROCEDURE

- Deep vein thrombosis / Pulmonary embolism (DVT/PE) – A blood clot in the leg veins that can break off and travel to the lungs is a serious, even life-threatening event. Morbidly obese patients are at higher risk for DVT/PE than individuals of normal weight. Laparoscopic or open surgery also raises the risk of these blood clots. We attempt to prevent DVT/PE in three ways:
- "Squeezer stockings" around the legs during and after surgery. These keep the blood flowing through the leg veins even while the patient is asleep and not moving.
- Anti-clotting injections. One dose of this mild blood thinner before surgery and each day thereafter may reduce the risk of DVT/PE, and generally does not result in significantly increased risk of bleeding.
- Walking. The small laparoscopic incisions used in weight loss surgery cause lots of soreness, but not so much that patients cannot get up to walk on the day of surgery. Once you are fully awake after surgery, the nurses on the bariatric ward will assist and encourage you as you get up to walk.
- Bleeding – Just like unwanted clotting can be a problem, bleeding can also result any time the body undergoes surgery. Generally, the amount of blood lost in a laparoscopic weight loss surgery would only fill about three tablespoons! Rarely, though, patients can have significant or even life-threatening bleeding and may need to return to surgery or have a blood transfusion.
- Infection – A dose of antibiotics is given at the beginning of surgery to prevent infection. While the small incisions used in laparoscopic bariatric surgery only rarely become infected, it can occur, and may require additional procedures or antibiotics.
- Injury to adjacent organs, blood vessels, or nerves – Other organs in the region the surgeon is working can rarely be injured, such as the spleen, pancreas, liver, or intestines.
- Hernias – Any incision into the abdomen can result in a hernia, a hole in the muscles where abdominal tissues or organs "bulge" through. This is much less frequent after laparoscopic surgery than after large open incisions.

- Scar formation – Any surgery causes scarring. The scars from laparoscopic surgery may be difficult to find after a year of healing, but in some patients they may be obvious. Every patient should remember that bariatric surgery is primarily about long-term health, and only secondarily about looking and feeling better about themselves. Some scarring may occur inside the body also, where the surgical work has been done.
- Conversion to open procedure – Although almost every patient is a candidate for laparoscopic weight loss surgery (even with prior abdominal surgery), your surgeon may make the decision during the procedure to convert from laparoscopic (multiple small incisions with video camera guidance) to open surgery (one large incision on the abdomen). This decision would be made by weighing the risks and benefits to you. If at any time your surgeon makes the judgment that making an open incision is safer for you, there will be no hesitation. Patient safety comes first. The scar may be larger and less appealing, but no amount of cosmetic benefit is worth putting a patient's life in jeopardy.
- Gallstone formation – In the setting of rapid weight loss for any reason, some patients may form stones in the gallbladder. These stones may occasionally begin causing symptoms of pain under the ribs on the right, especially after eating. Development of these symptoms may require additional later surgery to remove the gallbladder.
- Other risks – Allergic reactions, a longer hospital stay or intensive care unit (ICU) stay, breathing problems, metabolic or vitamin deficiencies, inadequate weight loss, heart attack, stroke, or even death are all risks in any kind of weight loss surgery. Your surgeon will discuss each of these with you individually.

RISKS PERTAINING TO GASTRIC BYPASS

- Leakage from intestinal connections or suture lines – The stapling and re-routing involved in gastric bypass entails creation of a connection between stomach pouch and small intestine. This kind of bowel connection is called an "anastomosis." These connections can occasionally fail (around 0.5-2% in most studies), causing intestinal contents like food and digestive enzymes to leak into the abdominal cavity. This would usually happen within the first two weeks after surgery, and is one more reason why strict adherence to your surgeon's instructions about liquid diet must be followed. A leak usually means one or more re-operations, a longer hospital stay, and an increased risk of other life-threatening complications. The most important connection in the gastric bypass is the one between the stomach pouch and small intestine. There are three important ways your surgeon can check for signs of leakage:
    - Leak test in the operating room – A flexible scope can be passed down the mouth into the stomach pouch, and, with the connection submerged in irrigation fluid, air is inflated into the stomach pouch and anastomosis, checking to ensure the connection is airtight, with no bubbles exiting.
    - Swallow leak test under X-ray – In some patients, the morning after surgery, an
      X-ray video will watch as the patient drinks contrast, ensuring it stays within the stomach and intestine, does not leak out, and passes through the connections easily.
    - Suction drain – The surgeon may leave a suction drain next to the intestinal connections inside, exiting the abdomen to a suction bulb outside. The appearance of this fluid will normally be like Kool-Aid or punch: red-colored with a little blood, but not brown, green, murky, or foul-smelling. This can be a "window" into what is happening inside the belly, and may give an early warning about a problem. The drain is usually taken out before leaving the hospital.
- Narrowing of intestinal connections – When an intestinal connection scars down to be too narrow for solid food to pass through, this is called a "stenosis" or "stricture." Around 5% of stomach pouch to small intestine connections will narrow enough to require treatment. Treatment usually involves passing a flexible scope down the mouth, under sedation, and using a balloon to stretch the connection. This is termed "dilation," and may be required one or more times. This complication usually shows up within the first 1-6 months after surgery.
- Ulcer formation – A special kind of stomach ulcer, called a "marginal ulcer", can form after gastric bypass right where the stomach pouch connects to the small intestine. This can occur at any time after gastric bypass: months or even years later. Marginal ulcers may cause pain, bleeding, or even rupture and leakage into the abdominal cavity. The two most important causes of marginal ulcer to avoid are: smoking and use of NSAIDs. NSAIDs are "nonsteroidal anti-inflammatory drugs", such as aspirin, ibuprofen (Motrin®, Advil®), naproxen (Aleve®, Naprosyn®), ketorolac (Toradol®), and COX-2 inhibitors (Mobic®, Celebrex®).

Patients who have had gastric bypass should never, ever smoke cigarettes for the rest of their lives.

- Internal hernia or intestinal blockage – Because of the unique re-arrangement of the intestinal tract after gastric bypass, patients may be at risk for blockage caused by scar tissue or a special type of intestinal blockage called "internal hernia." The main thing to remember is this: abdominal pain after gastric bypass is not normal, and should prompt you to see your doctor. Once the surgical pain is gone after gastric bypass, a return of abdominal pain could signify intestinal blockage or an ulcer, as described above.

RISKS PERTAINING TO SLEEVE GASTRECTOMY

- Leakage from stomach suture line – The stapling and removal of a portion of the stomach in sleeve gastrectomy means that a long staple line needs time to heal. Like in gastric bypass, this staple line can occasionally fail and rupture (around 0.5-2% in most studies), causing intestinal contents like food and digestive enzymes to leak into the abdominal cavity. This would usually happen within the first four weeks after surgery. A leak usually means one or more re-operations, a longer hospital stay, and an increased risk of other life-threatening complications. There are three important ways your surgeon can check for signs of leakage:
- Leak test in the operating room – A flexible scope can be passed down the mouth into the stomach tube (sleeve), and, with the sleeve submerged in irrigation fluid, air is inflated into the sleeve, checking to ensure the seal is airtight, with no bubbles exiting.
- Swallow leak test under X-ray – In some patients, the morning after surgery, an X-ray video will watch as the patient drinks contrast, ensuring it stays within the stomach and does not leak out, and passes easily into the small intestine.
- Suction drain – The surgeon may leave a suction drain next to the stomach staple line inside, exiting the abdomen to a suction bulb outside. The appearance of this fluid will normally be like Kool-Aid or punch: red-colored with a little blood, but not brown, green, murky, or foul-smelling. This can be a "window" into what is happening inside the belly, and may give an early warning about a problem. The drain is usually taken out before leaving the hospital.
- New onset or worsening of gastroesophageal reflux (GERD) – Because sleeve gastrectomy alters the anatomy of the stomach with relation to the esophagus, some patients can experience new or worsened gastroesophageal reflux symptoms, such as heart- burn, "gurgling" in the chest, asthma exacerbations, hoarseness, or regurgitation of fluid or food into the mouth. These symptoms have been studied and found to decrease following the first year after surgery, but some patients may require continued medication or revisional surgery.
- Narrowing of stomach tube – Despite the use of a sizing tube when constructing the sleeve gastrectomy, occasionally the stomach tube (sleeve) scars down after surgery to be too narrow for solid food to pass through. This is called a "stenosis" or "stricture." Around 5% of sleeve gastrectomies will narrow enough to require treatment.
- Treatment usually involves passing a flexible scope down the mouth, under sedation, and using a balloon to stretch the affected area. This is termed "dilation," and may be required one or more times. This complication usually shows up within the first 1-6 months after surgery.

THE ROAD TO WEIGHT LOSS SURGERY

Because morbid obesity is associated with so many severe and chronic medical problems, there is a detailed and occasionally time-consuming process involved in getting ready for surgery. Some morbidly obese patients may not even be candidates for bariatric surgery, due to the severity of their illness. Our goal is to provide a superb quality of care, with low rates of complication, to help as many patients as possible with weight loss.

Medical Weight Management

We require a minimum of three visits over a minimum of three months of supervised nutrition, as well as a history of obesity.

Pre-Surgery Studies

If the studies listed below have already been accomplished, we require that records be provided. These studies can be grouped into two categories: 1. Basic preventative health maintenance, and 2. Risk assessment for safe surgery. We will provide you with a checklist so that your PCP can order and follow these exams.

Health Maintenance

Up-to-date on:

- Colonoscopy (adults >50, history of IBD (Irritable Bowel Syndrome), or with strong family history of colon cancer)
- Pap smear (all women, unless prior hysterectomy)
- Mammogram (women >40, or with prior breast cancer or pre-cancer)
- PSA (Prostate-Specific Antigen) for men >50

Risk Assessment for Safe Surgery

- Overnight sleep study and repeat as necessary (to evaluate and treat sleep apnea)
- Psychiatrist's or psychologist's assessment of suitability for surgery
- Upper GI X-ray swallow series or flexible upper endoscopy (to evaluate esophagus, stomach, and upper intestine)
- Comprehensive fasting blood laboratory panel
- Echocardiogram (patients with Phen-Fen use, pulmonary hypertension, or cardiac disease)
- Internal Medicine (patients over 50 with DM, BMI > 50, Phen-Fen use, cardiac history)

Support Group

- Weight-loss support groups are key for long-term success. Regular attendance and involvement serves as a reminder of what you are supposed to be doing.

PERSONAL BARIATRIC PRE-OPERATIVE CONSULTATION

Once you are ready to take that step into weight loss surgery, or even if you have some doubts or misgivings, you can discuss these with a bariatric surgeon. The doctor will meet you and get to know you better. A physical exam will be performed during the office visit, and there will be an extended period of discussion about bariatric surgery: your options, a tailored plan for you, what the risks and benefits of surgery are, and what to expect before, during, and after your hospital stay. Our goal is that every patient be as in- formed as possible, so that the best decisions can be reached, to enhance long-term success. The more you can do to inform yourself about bariatric surgery before your consultation with the surgeon, the easier this process is.

BEFORE YOUR SURGERY

Once your surgery date has been scheduled, there will be some tasks to accomplish:

- You will meet with a bariatric provider for pre-op teaching
- You will be sent to admissions
- You will be scheduled to meet with an anesthesiologist
- You will be sent to obtain blood work and/or X-rays to prepare for surgery
- You will start a two-week liquid diet
    - …"What was that? A DIET?
    - If I could lose weight with a diet, I would have done that already!"

Actually, the pre-surgery, two-week, high protein, low calorie, low carbohydrate, liquid diet is meant to make your surgery safer and simpler. During surgery, your bariatric surgeon has to lift part of the liver out of the way in order to get to the stomach. In morbidly obese patients, the liver is generally fatty and enlarged. One study showed that 100% of bariatric surgery patients had fatty liver changes! This large, fatty liver is dangerous, because it can obscure the surgeon's view of the surgery site, and also because the fatty liver is more fragile, making it susceptible to tearing and bleeding when the surgeon lifts it out of the way. It has become standard practice in bariatric surgery to restrict calorie intake before surgery in this way, to shrink the liver size, making the surgery safer and easier.

There is no specified amount of weight that must be lost in the two-week liquid diet. The requirements are simply:

- Each patient must DO the two-week liquid diet; no cheating, no fudging
- Each patient will LOSE WEIGHT on the liquid diet. If you are weighed on the day of surgery and your weight is higher than at your pre-operative visit, your surgery will
  be cancelled.

FOR PATIENTS WITH DIABETES

Because the high-protein liquid diet is very low in calories and has a very low glycemic index, you may be at risk of hypoglycemia, or low blood sugar, during this time. It is extremely important that you check your blood sugar before each meal and before bedtime during the two-week liquid diet. Have a piece of hard candy available in case your blood sugar drops too low and you feel symptoms such as sweating, weakness, lightheadedness, or nausea. Call the clinic if your fingerstick readings are ever below 70, or below 90 consistently. Ask your surgeon if you should stop any of your diabetes medications when starting the liquid diet.

FOR PATIENTS WITH KIDNEY DISEASE

Talk to your surgeon about an individual, personalized plan for the pre-surgery liquid diet.

FOR LACTOSE INTOLERANT PATIENTS

Many patients report that they are lactose intolerant before surgery, or become so after surgery. There are a number of lactose-free dairy options now available, and realize that most nutritional shakes will be lactose-free. Reading labels is helpful in determining which ones these are.

TWO-WEEK LIQUID DIET RECOMMENDATIONS*

- GNC 100% Whey Protein
- Premier Protein
- EAS®
- Unflavored protein powder (to mix with other liquids)
- Skim milk or light soy milk (or lactose-free skim milk)
- Slimfast® (carb control)
- Body Fortress Whey Protein
- Crystal Light® or sugar-free drink mix
- Sugar-free popsicles
- Low-fat beef/chicken/vegetable broth
- Dannon® Light and Fit Greek Yogurt
- Chewable multivitamin (with iron, for women) (start taking it now!)

** Note: this is essentially the same as a bariatric Stage 2 diet, shown below, and will be what you are discharged from the hospital on, until the two week postoperative visit.*

THE DAY BEFORE SURGERY

This is a great time to look forward to your new, healthier life! Take some time today to be thankful, for family, friends, and blessings. Do some light exercise in the morning. Spend some time stretching, meditating, or doing yoga. Stay well hydrated!
After midnight, nothing to eat or drink is allowed, unless the anesthesiologist has instructed you to take some medications with a sip of water.

THE DAY OF SURGERY

Check-In

After checking in, you will be shown to the waiting area. You should have your home CPAP unit with you at the hospital. After changing into a hospital gown, you will be brought to the pre-surgery holding area. Your family and friends will go to the family waiting room, but they should realize that your surgery does not begin right then. There will be some time spent double-checking paperwork, getting you into the operating room, positioning you on the bed, and putting you to sleep under anesthesia. Not to worry if things are not done as quickly as they expect – we keep in touch with family to notify them of your condition and progress!

Recovery

You will awake in the operating room, but may not remember anything until you are in the recovery room or even in your room on the bariatric ward! Keep your nurse informed if you are experiencing pain or nausea; medication is available to control these. You may have a button to push to dose yourself with pain medication, called "Patient-Controlled Analgesia", or PCA. Use this when you need it for pain. Realize that the IV pain medication may cause some headache, dry mouth, dizziness, or disorientation. Above all, nobody but YOU should push the pain button; well-meaning family members can cause serious injury or death by trying to "help" you push your pain button.

On the day of surgery, once your pain is under reasonable control, you will need to get out of bed to walk; your nursing team will be encouraging you to do so. Many patients will not have a urinary catheter, so the nursing staff will be monitoring your ability to urinate on your own.

Walking after surgery is the most important thing you can do to speed your recovery and avoid complications.

If you use CPAP or BiPAP at home for sleep apnea, you will need to use it any time you are sleeping – naps, overnight – ANYTIME. If you have severe sleep apnea, you will be connected to a continuous oxygen monitor (pulse oximetry) while you are in the hospital, so that the nursing staff is alerted if your oxygen levels fall.

For all patients, and especially those with sleep apnea, a simple plastic breathing exercise machine (Incentive Spirometer) will be pro- vided for lung exercises. It is important to use this often. Plan on doing ten or more cycles of these per hour.

THE DAY AFTER SURGERY

SWALLOW STUDY

Some patients will have an X-ray swallow study the morning after surgery; some LAP-BAND® patients will have this on the day of surgery. The swallow study is done to ensure that swallowed liquids are able to pass through the new surgical anatomy, and that there is no leakage into the abdominal cavity. Small sips of X-ray-visible contrast are taken while the radiologist examines for any signs of problems. As long as this study looks good, you will be given fluids to drink!

FLUID INTAKE

The maximum goal for your post-surgical fluid intake is 160cc (5 oz.) per waking hour. You may be able to do this right away, or you may not reach that goal until the following day. It doesn't seem like much, but you will be surprised how challenging it is to meet your fluid goal.

REMEMBER:

4 oz. per hour x 16 waking hours per day
= 64 oz. fluid intake per day, minimum

You will be given one-ounce (30cc) medicine cups in the hospital to measure your fluid intake. Four cups an hour is the goal. The strict minimum volume requirement is meant to help each patient think in terms of "ounces of fluid volume", so that after discharge home, an estimate of daily fluid intake is easy.

HOSPITAL DISCHARGE

Showering

You may shower beginning the day after surgery. While showering, have your back towards the water. Using antibacterial soap and a washcloth, work up a good lather. Wring out washcloth over the incision(s) and rinse using the same technique. DO NOT RUB OR PICK
AT YOUR INCISIONS!! You may take a bath after the surgeon gives the OK, typically after two weeks.

Diet

You will leave the hospital on a Stage 2 diet, essentially the same as the pre-surgery liquid high-protein diet. Be sure to take in enough protein and fluids. The DIET section of your Bariatric Surgery Guide contains more information about the details of your diet.

Recovery

It may take 6-8 weeks for you to begin to feel like yourself again. Fatigue occurs after every major surgery and the degree will vary from person to person. You probably will still tire easily for several months (up to six) because your body is using a lot of energy to heal itself. Make it a point to rest when you feel tired. See the ACTIVITY RESTRICTIONS section of the Bariatric Surgery Guide for more information.

CPAP/Oxygen

If you are on CPAP or oxygen prior to surgery, you will need to continue to wear it after your surgery. At your 6 or 12 month follow-up visit, a consult for a repeat sleep study will be ordered. Once the results are reviewed by the doctor, you will be contacted and informed about discontinuation of the device. Until then, you are encouraged to continue to wear the device while sleeping.

Medications

For the first month following bariatric surgery, all medications should be crushed or split, or in liquid form. If crushing pills is distasteful due to the flavor, pills may be split into grains the size of Nerds® candy. You will be instructed (in your discharge orders) which home medications to continue and which to stop. Verify all medications to restart, stop or new ones to begin before you are dis- charged home.

Pain Medications

You may be given a prescription for liquid Tylenol with Codeine, Vicodin, Lortab or Percocet. All tablets should be crushed or split. Over-the-counter liquid or crushed acetaminophen (Tylenol®) may be used once this medication has been used up. Upon discharge from the hospital, you should taper off your pain medications. Seldom do patients continue to require strong pain medications more than seven days after surgery. If you have pre-existing problems requiring narcotics, you will need to continue seeing the appropriate provider. Narcotic prescriptions for pre-existing conditions will not be re-prescribed by our clinic.

Pain Medications to Avoid (Gastric bypass only)

The following medications may cause an ulcer in your pouch: Advil®, Motrin®, Ibuprofen, Aleve®, Naprosyn, Aspirin, BC Powder, Excedrin®, Celebrex®, Toradol®. You should permanently avoid taking these and other medications which are classified as “non-steroidal anti-inflammatory drugs”, or NSAIDs. These greatly increase the risk of ulcers after gastric bypass. For band or sleeve patients, these medications are not prohibited, but may be used cautiously according to directions.

Vitamins/Calcium

A chewable multivitamin (with iron, for women) should be taken daily. A chewable calcium citrate with Vitamin D supplement should be taken twice a day. See the VITAMINS section of the Bariatric Surgery Guide for more information.

Signs/Symptoms of Infection

Indicators of infection include: Redness, swelling, or heat at your incision site, severe bloating in the abdomen after eating, and in- creased soreness or pain at your incision site, fever greater than 101°F, excessive drainage from your incision (especially greenish/yellowish or brown in color and/or foul smelling drainage from your incision site).

Signs/Symptoms of a Leak or Other Serious Problem

Increased heart rate (>120 beats per minute), fever (above 101°F), increased respiratory rate (>30 breaths per minute), shoulder pain, chest pain, shortness of breath, extreme tiredness or fatigue, severe abdominal pain, excessive thirst. If you experience any of these symptoms, go to the nearest Emergency Department IMMEDIATELY and tell them you are a bariatric patient.

Constipation

Some patients may experience occasional diarrhea related to certain foods. However, in the event that you should become constipated, it may be related to your use of narcotic pain medication. In this case, you may take Milk of Magnesia, one to two tablespoons every six hours as needed until your constipation resolves. If this does not alleviate your constipation in 1-2 days, please call the clinic at the telephone numbers given.

Follow-Up Appointments

After the first month's, you will need to contact the clinic yearly to make follow-up appointments. Fasting pre-clinic labs should be drawn a week prior to your appointment. If you need to reschedule, call the clinic at the numbers provided.

ACTIVITY LIMITATIONS AFTER BARIATRIC SURGERY

Exercise

After bariatric surgery, patients can and should begin walking regularly as they are able. See the EXERCISE section for more details on beginning a walking program. For the first four weeks after laparoscopic weight loss surgery (and the first eight weeks if you had an open procedure), heavy lifting and abdominal straining is prohibited. “Heavy lifting” is defined as greater than 10 lbs. This includes children and animals. Abdominal straining includes sit-ups, weight lifting, pushups, pull-ups, yoga, Pilates, or crunches. After 4 weeks, if your surgeon releases you, you may resume any level of activity that you can do comfortably. If it hurts to do, your body is telling you to stop or ease up.

Driving

Patients are prohibited from driving or operating heavy machinery while in pain or while on narcotic pain medications (Lortab, Vicodin, Percocet, Tylenol 3, etc.). Narcotic medications impair reflexes and thinking, and pain prevents a driver from safely being able to react quickly to avoid a collision. Patients are usually off of all narcotic pain medications by 3-4 days after surgery, and are usually pain-free by one to two weeks post-surgery. Also, call your auto insurance company to see if they have additional driving restrictions after abdominal surgery.

Working

On average, patients request two weeks off work. Some patients return to work 2 weeks after surgery; others need 4-6 weeks to feel ready to return. In general, patients may return to work when feeling “up to it,” as long as the occupation does not involve heavy lifting or straining. Should a release letter from the bariatric surgeon be necessary, we would be glad to provide this. Realize that after major surgery, you will fatigue more quickly for some weeks afterward. It may be advisable to return on a half-day trial basis at first, to see how things go. Call the clinic if you have any questions.

WEIGHT LOSS EXPECTATIONS AFTER BARIATRIC SURGERY

Any of the above procedures can successfully start patients on the road to recovery from morbid obesity, but surgery alone will not ensure long-term success. Surgery is a tool. Just like a spade won’t dig and plant and weed a garden by itself, surgery alone will not ensure achievement of a healthy weight. Healthy eating habits and a disciplined exercise plan are vital to ensure long-term health.

Most patients lose nearly half of their excess weight in the first year and continue to lose weight after this point. There is no amount of weight loss that is guaranteed. Weight control is the personal responsibility of the patient.

Successful eating habits include eating 3-4 small, well-balanced meals, and a maximum of one healthy snack a day. Patients tend to gain weight back if they start eating larger portions, graze, consume processed foods or junk foods, or drink high calorie beverages. Carbonated, caffeinated, or sugary beverages should be avoided. Alcohol consumption is not recommended after weight loss surgery, because it contains empty carbohydrate calories, much like soda. Alcohol also tends to be more potent in patients after bariatric surgery, leading to lapses in judgment or even tragic accidents. Finally, patients who are shedding their lifelong addiction to food and calories do not need another potential "slippery slope" to fall down. A clear mind and a disciplined attitude are the hallmarks of a successful bariatric surgery patient.

A program of regular exercise is important for promoting and maintaining weight loss. Studies have shown that patients who exercise 45 minutes at least three times per week lose an average of 18% more excess weight than patients who do not exercise regularly. There are several long-term habits that successful patients can adopt, and the first post-operative year is a critical time to dedicate to changing old behaviors and forming new, lifelong habits. The success of weight loss surgery is most commonly defined by the total weight loss during the first 1-2 years. However, foremost in the minds of patients undergoing surgery for morbid obesity are the questions:

- "Will this be a long-term solution?"
- "What can I do to insure my lifelong success?"

In other words, how can I maintain most of my initial excess weight loss after a successful weight loss operation? Each patient must take personal responsibility for staying in control. The successful patient realizes that maintaining a healthy weight is indeed their own responsibility, and that surgery is a tool to assist in reaching and maintaining a healthy weight.

Lack of exercise, poorly balanced meals, constant grazing and snacking, and drinking high-calorie beverages are the basic causes of not maintaining weight loss. Regular attendance of support group can be a huge help for patients. Support group is like a community or congregation. It is the one place (besides your doctor's office) that patients can be totally honest with each other. That accountability is a powerful motivator for long-term success in weight management.

DIET STAGES

Close adherence to the recommendations in this Weight Loss Surgery Guide is essential for long-term health and success. It is essential that you take daily multivitamin supplement and calcium citrate with Vitamin D for the rest of your life in order to achieve optimal post-operative nutrition. In the period right before and after surgery, you will need to take a protein supplement to ensure proper nutri- tion and healing. Post-operative diets are separated into stages 1, 2, 3 and 4. Depending on your choice of procedure, your surgeon may start you on Stage 1 or 2. Here is an overview of the bariatric diet stages:

Stage 1 – A clear liquid, sugar free diet

- This essentially provides hydration during the initial post-operative period.
- Usually only for the first part of the day after surgery.

Stage 2 – A full liquid, sugar free diet

- High in protein, low in calories. No chunks!
- Provides all the essential requirements for the first two postoperative weeks.
- Patients go home from the hospital on the Stage 2 diet.

Stage 3 – A pureed diet

- The surgeon will instruct the patient when to start this stage.
- Usually started at the two-week post-surgery visit.
- Introducing semi-solid or solid food too early after surgery may lead to obstruction and vomiting. With the LAP-BAND®, vomiting may lead to band slippage; with the gastric bypass or sleeve gastrectomy, it may unduly stress your suture line, leading to a leak!

Stage 4 – A healthy regular diet

- 3-4 small meals per day, ensuring 60-80g of protein per day.
- Lean meats (chicken, fish, etc. baked or grilled, not fried)
- Freshest possible fruits, vegetables (fresh is better than frozen, which is better than canned).
- Whole grains and fiber.
- Avoid process or prepackaged foods.
- This is the diet that all patients will ultimately achieve.

STAGE 2 DIET – HIGH PROTEIN, LOW CALORIE FULL LIQUIDS

You will follow this diet for two weeks before your surgery and for the first two weeks after surgery.

Goals

Adequate protein to promote healing after surgery and help build lean body mass: 60-70 grams protein per day for women and 70- 80 grams per day for men.
Adequate fluid to prevent dehydration: 48-64 oz per day initially after surgery; 4-5 days post-op increase to 64-96 oz of sugar
free, caffeine free fluids per day.
Remember, all fluids count toward your fluid goal, even protein shakes, etc.
Calorie intake will be 600-1000 calories per day in this post-op stage.

Examples of Full Liquid, High Protein, Low Fat, Low Carbohydrate, Low Sugar (or No Sugar Added)

- GNC 100% Whey Protein
- Premier Protein
- EAS®
- Unflavored protein powder (to mix with other liquids)
- Skim milk or light soy milk (or lactose-free skim milk)
- Slimfast® (carb control)
- Body Fortress Whey Protein
- Crystal Light® or sugar-free drink mix
- Sugar-free popsicles
- Low fat beef/chicken/vegetable broth
- Dannon® Light and Fit Greek Yogurt
- Chewable multivitamin (with iron, for women) (start taking it now!)

Tips for the Liquid Stage

Get creative with your protein drinks! You won't drink it if you don't like it.

- Visit **bariatriceating.com** or **unjury.com** for protein drink recipes and ideas.
- Purchase flavored protein powder with less than 10 grams of carbohydrate per 8-ounce (1 cup) serving.
- Add sugar-free flavored extracts to spice things up.
- If you find that you have become lactose intolerant, try lactose free milk or a lactase supplement before eliminating dairy from your diet. Dairy is a great source of protein, calcium, and vitamin D!
- Avoid "sugar alcohols" (i.e. sorbitol).
- Half of the calories from sugar alcohols are absorbed.
- Too much can cause diarrhea.
- Avoid foods that are high in fat and sugar—these foods may cause dumping syndrome in gastric bypass patients, and weight gain in others!
- If you are taking a calcium supplement, take it separately from your multivitamin with iron.
- You should be taking 1500 mg of calcium citrate.
- Divide the dose up into 500 mg three times throughout the day; this helps your body absorb the calcium more efficiently.
- If you have questions about your diet, contact the bariatric clinic or your registered dietitian.

Recipes for Bariatric Stage 2 High Protein Supplements

High Protein Milk

Instructions: In a blender, mix:

- 1 cup skim milk
- 1 scoop (1 ounce) protein powder
- Sugar substitute
- Vanilla or flavoring

This recipe provides: 190 calories, 28 grams protein, 2 grams fat, 1 gram fiber

Variations:

- Chocolate milk: Add unsweetened cocoa powder to the recipe before mixing.
- Hot chocolate: heat the chocolate milk. Sip slowly.

High Protein Fruit Punch

Instructions: In a blender, mix:

- 6 ounces sugar-free powdered fruit drink (such as Crystal Light® or sugar-free Kool-Aid®)
- 1 scoop (1 ounce) protein powder
- 4 ice cubes

This recipe provides: 110 calories, 20 grams protein, 4 grams carbohydrate, 2 grams fat

When choosing protein shake supplements at the store:

- Read labels. Look for supplements with:
  - At least 20 grams (g) of protein per 8-ounce (1 cup) serving
  - Less than 10 grams total carbohydrate per 8-ounce serving
- Do not choose any of the following supplements. They are too high in carbohydrates:
  - Carnation Instant Breakfast
  - Ensure
  - Boost
  - SlimFast
  - Herbalife

Tips for Protein Shakes

- Freeze skim milk in ice cube trays. Blend these “milk cubes” with your shake to make it cold and slushy. This also adds protein without diluting your shake.
- Turn an ordinary protein shake into a vanilla or mocha latte by adding 1 teaspoon of decaffeinated instant coffee to a vanilla or chocolate shake.
- If you find that you do not tolerate milk, you can use fat free Lactaid® milk or soy milk to add protein to your shake. Avoid flavored soy milk (i.e. vanilla, chocolate, almond) as it contains a large amount of added sugar.

STAGE 3 DIET – HIGH PROTEIN, LOW CALORIE PUREES

Follow this nutritional stage, blending everything to the consistency of applesauce, until your surgeon or dietician gives you new instructions. This stage will usually begin at your first doctor's visit after surgery.

Goals

- To help you lose enough weight after bariatric surgery.
- To provide enough protein, fluid, vitamins, and minerals to keep you healthy.
- To decrease the likelihood of complications or side effects after surgery.

Drink Guidelines

- Drink 64-96 ounces or more of sugar free liquids every day. To drink this much, try sipping 1 ounce (2 tablespoons) every 15 minutes.
- About half of what you drink (24 ounces per day) should be high-protein drinks. These should have at least 20 grams protein, less than 10 grams carbohydrate.
- At least half of what you drink (24 ounces or more per day) should be sugar-free liquids. Good choices include the following:
    - Water
    - Decaffeinated coffee or caffeine-free tea without sugar (you may use sugar substitute)
    - Sugar-free, noncarbonated drinks
    - Crystal Light® or sugar-free Kool-Aid®
    - Sugar-free Jell-O® (¼ cup = 2 ounces)
    - Sugar-free popsicles
    - Broth
- Do not drink liquids with a meal or for one hour after a meal. This may impair your weight loss and impede adequate nutritional intake. You may also be more likely to regain weight later.
- Do not drink alcohol. It is dehydrating, has no nutrients, and is high in calories.
- Do not drink carbonated (bubbly) drinks. The bubbles may give you gas, cause bloating, and stretch the stomach pouch.

Meal Guidelines

- Stop eating when you first feel full.
- All foods must be blended, pureed, or already the consistency of applesauce.
- Take 30 or more minutes to eat each meal.
- At this stage, you may be eating 6-8 "meals" per day (or three meals with three healthy snacks).
- Eat foods in this order:
- Eat protein foods first. Foods with protein include pureed meat, fish, poultry, and eggs.
- Next, eat vegetables and fruit.

Vitamin and Mineral Supplements

- Take a chewable multiple vitamin/mineral supplements daily. You must do this forever!
- Do not quit taking your vitamins, no matter how good you feel.
- Take your vitamins and calcium at least two hours apart. DO NOT TAKE TOGETHER.
- Your doctor or dietitian will reinforce these habits with you.

Dumping Syndrome

Dumping syndrome is a condition where food does not stay in the stomach for long enough. Instead, it is "dumped" into the small intestine. This can make you feel weak or dizzy, get a headache, turn red or feel flushed, sweat, or have diarrhea later.
To avoid dumping:

- Do not drink liquids with a meal.
- Do not drink liquids within 60 minutes after a meal.
- Do not eat or drink foods made with sugar.
- Avoid high-fat and greasy foods.

Sample 1-Day Menu

Breakfast: 2 tablespoons cottage cheese and 1 tablespoon strained peaches
Snack: 8 oz. protein shake
Lunch: 2 tablespoons pureed chicken, 1
tablespoons pureed vegetable or fruit Snack: 8
oz. protein shake
Dinner: 2 tablespoons pureed turkey, 1 tablespoons
pureed vegetable or fruit Snack: 8 oz. protein shake

Remember:

- Take 30 or more minutes to eat each meal.
- At meals, always eat protein (meat, eggs, fish, or poultry) first!
- Add unflavored protein powder to foods to boost your protein intake.
- Do not drink liquids at meals.
- Wait at least 60 minutes after a meal to start drinking fluids. Aim for 48 to 64 oz (6 to 8 cups) of fluids daily.
- Stop eating or drinking when you are full.
- Do not drink alcohol.
- Sip, don't gulp!

STAGE 4 DIET – REGULAR, HEALTHY FOODS

Guidelines

- Chew, chew, chew! You cannot over-chew your food.
- Drink, drink, drink! But do not drink while eating. Wait at least 60 minutes after a meal before drinking fluids. When you do drink, sip—don't gulp! Do not drink alcohol.
- Stop eating when you feel full. If you keep eating, you may vomit. Overeating also stretches the pouch and may keep you from losing weight. To listen to your body and understand the "full" signal, you will need to learn to eat more slowly.
- Get enough protein. At meals, always eat protein first. Liquid protein supplements are now only "as needed".
- Plan and eat three meals per day, with perhaps a healthy, high-protein snack in between meals.
- Take your multivitamin and calcium citrate with Vitamin D every day, at least 3 hours apart.

Recommended Foods

High-Protein Foods

- Light (low-sugar, nonfat) yogurt
- Cottage cheese
- Cheese
- Tuna packed in water
- Crab, fish, scallops, and oysters (avoid fried)
- Skinless chicken or turkey, cooked until very tender and cut into small pieces
- Lean pork or beef, cooked until very tender and cut in small pieces
- Low-fat deli meats

Other Healthy Choices

- Beans and lentils
- Cooked tender vegetables without tough peels
- Fresh fruits (avoid fruit juices, since these are high in concentrated simple sugars)

Foods Not Recommended

Tough Foods

- Tough, dry or chewy meat (beef & pork are notorious for getting "stuck")

High-Fat Foods

- Whole milk, half-and-half, or coffee creamers
- Ice cream, cakes, cookies, pies, pastries and other desserts

High-Calorie Foods

- Prepackaged, processed ready-to-eat meals or snacks
- Juice or regular soda
- Fast food

Foods Not Recommended Until 3-6 Months After Surgery

"Sticky" Foods

- Soft bread (it can make a dough ball that could plug up the pouch outlet)
- Sticky or sweet rice
- Spaghetti and other pasta
- Macaroni and cheese
- Raisins, prunes, and other dried fruits (these may be too sweet)

Crunchy Foods

- Granola and other cereals with nuts
- Tough raw vegetables (some patients have trouble early on with salad, some do not)
- Nuts, popcorn and chips

Some of these you may never be able to eat – you will have to wait and see how it goes.

NUTRITIONAL EXPECTATIONS

Eating Habits After Surgery

After bariatric surgery you will need to make changes to your eating patterns. The diet after surgery progresses from a liquid diet to a pureed diet and then a modified regular diet. The diet progression is designed to allow your body to heal, and for the initial tissue swelling after surgery to diminish. Initially, it will help you meet your protein and liquid requirements, and later, to assist you in meeting your nutritional needs. It is imperative that you follow the diet's progression and adhere to this regimen to maximize healing and minimize the risk for unnecessary complications.

The size of the stomach pouch is about 1 ounce (2 tablespoons) for the LAP-BAND® and Gastric Bypass, and about 3-4 ounces (6-8 tablespoons) for the Sleeve Gastrectomy.

Listening to Your Body

At first, your capacity will be somewhat limited, so be patient. You may find that two to three teaspoons of food fill you up. This is expected. You may also find that you are able to eat more of one type of food than another. This is okay, too. Patients are often surprised how their tastes change after surgery; foods that were previously enjoyed may seem unappetizing after surgery.

One of the changes that patients often comment about is the concept of "wasting food". After surgery your eyes and head still work the same way as they did before. However, because of the new stomach pouch, you will be satisfied with much less. It is critical that you listen to your body's signals of fullness, rather than letting your eyes guide you when you still see food left on your plate.

Balanced, Healthy Meals

It is common to see some variation from program to program related to nutrition. Just as there are many food options, there are many options and preferences post-operatively. However, most programs agree that protein plays an important role in maintaining health and satiety. Protein keeps us feeling fuller, longer! Low-fat dairy, eggs, fish, meat, etc. are some of the core components of our diet after bariatric surgery. This is not to say that carbohydrates and fats can be eliminated from the diet. It is not possible to fashion a diet consisting only of protein, because carbohydrates and fats are essential to good nutrition, too. The problem arises when we consume concentrated fats and carbohydrates in our processed, refined foods.

No one has ever become obese by eating fruit, but fruit juice will contribute to weight gain, because juice is a concentrated sugar source without any of the fiber or bulk of fruit. Take this time to clear out all the junk foods and processed high-calorie foods from your home. You don't need that temptation hanging around after surgery. If your family protests, stay strong. Remind everyone that those foods are part of what got you into this situation, and your family needs to support you every step of the way in weight loss. They might even benefit from eating healthier along with you!

A diet consisting of 800 – 1000 calories per day, with 60 – 80 grams of protein, should be the goal. Protein drinks or shakes can be helpful to fulfill daily protein requirements, at least initially after surgery. There are many to choose from. Look for protein drinks that are low calorie / low sugar, and that have a good taste.

Dumping Syndrome

Avoid foods which contain added sugar! Not only will sugar slow down weight loss, it can make you sick! Sugar may cause "dumping syndrome" in gastric bypass patients. Dumping is caused by high concentrations of sugar or fat passing directly from the stomach pouch into the small intestine, causing heart pounding, nausea, flushing, sweating, abdominal pain, and later, diarrhea. Symptoms may vary among patients. Dumping lasts about 30 minutes to an hour.

To maintain a healthy weight and to prevent weight gain, you must develop and keep healthy eating habits. You will need to be aware of the volume of food that you can tolerate at one time and make healthy food choices to ensure maximum nutrition in minimum volume. A remarkable effect of bariatric surgery is the progressive change in attitudes towards eating. Patients begin to eat to live – they no longer live to eat. Exercise must also be part of your daily routine, and we will explore that topic next.

HEALTHY EATING RECOMMENDATIONS & TIPS

1. Do not drink liquids with meals. You may drink liquids 30 minutes before the meal. Then wait at least 60 minutes after meals before resuming fluids to prevent pouch stretching and vomiting.
2. Measure your meals.
3. Eat 3-4 small, protein-heavy meals per day at regular times, sitting at a table. Eat slowly, savoring the taste, rather than the quantity, of your food. Do not eat when feeling rushed or stressed as this may cause gastric upset. Do not skip meals.
4. Avoid eating alone. Mealtime should be a shared experience, a time to talk with family or friends. Talk between each bite; this makes it easier to eat more slowly.
5. Stop eating when feeling full or if feeling any discomfort.
6. Always cut food into small pieces and chew food very well to prevent blockage.
7. Concentrate on eating protein-rich foods such as fish and seafood, low-fat dairy, eggs, and poultry. At mealtime, eat protein foods first before any other food.
8. One healthy snack per day is appropriate; "grazing" throughout the day on junk is not.
9. Suggestions for healthy snacks: nuts, no sugar added Greek yogurt, protein bars or shakes.
10. Avoid very sweet food, candy, chocolate, and high-sugar beverages to prevent the unpleasant effects of dumping syndrome.
11. Sip liquids slowly, all day long, except at mealtime, to total at least 10 eight-oz cups per day to avoid dehydration.
12. Say goodbye to alcohol intake; it is high in calories, may cause an ulcer, and the effects may be felt much more quickly.
13. Take a multivitamin supplement (with iron for females), and calcium citrate with Vitamin D every day.
14. Some patients may find that drinking through a straw causes them to swallow excessive air, causing bloating or abdominal pain. Avoid straws if you find this true in your case.
15. Avoid the "Honeymoon Syndrome". The lack of hunger and quick weight loss following weight loss surgery gives you a false since of security. This is a tool that must be utilized with diet and exercise.

Vitamins

An Internet search of "bariatric nutrition" will reveal all sorts of vitamin and nutritional supplements marketed toward the bariatric patient. We will try to help make sense of some of this for you. Beyond what we've listed here, the rest is your choice. Be careful to choose vitamins and supplements only from trusted and respected retailers.

Required Vitamins

- Multivitamin (women should take one with iron) – daily
- Calcium citrate with Vitamin D – twice daily
- Prevents bone thinning (osteoporosis)
- Careful not to get calcium carbonate (not as well absorbed by the body)
- Chewable form for the first month, then either chewable or pill

Occasionally Required Vitamins

- Vitamin B12 – for some gastric bypass patients who become B12 deficient
- Used in metabolism in every cell in the body
- Easiest way for most bypass patients is the B12 sublingual "dots" – a once-a-day, under the tongue pill that dissolves directly into the bloodstream. Available over the counter.
- If "dots" are not effective, some patients will require once-a-month shoulder injection.
- Biotin (B7) – another over the counter vitamin supplement that some believe may help prevent or treat hair loss.
- Vitamin D – for some patients whose Vitamin D levels are inadequate even with twice daily calcium with Vitamin D
- Involved in calcium absorption in the intestine and in keeping bones strong
- Available over the counter
- 15 minutes of sun exposure twice a week can also help boost Vitamin D levels
- Selenium – believed by some to prevent or treat hair loss
- Zinc – also believed by some to prevent or treat hair loss

EXERCISE

Importance of Exercise

As outlined above, patients after weight loss surgery are only consuming 800-1000 calories a day initially, perhaps increasing over time to 1200 calories per day. This would result in outstanding weight loss by itself, if not for the body's remarkable ability to compensate. Our bodies are very good at maintaining the status quo. The medical word for this is homeostasis: When the intake of calories dips (as happens after bariatric surgery), the body attempts to lower its metabolic rate to match the new calorie intake. This is how humans survive food shortages and famines! It is also why dieting is such a difficult way to lose weight – the body is working against all your efforts.

After weight loss surgery, all the body knows is that there is a sudden scarcity of food calories. And so the body reduces the amount of energy it burns in doing everyday activities, to conserve the status quo (and survive the food shortage!). Because of this, weight loss proceeds slower than one might think, and patients can feel fatigued or tired more often. And although it is the opposite of what one might think, the solution to that feeling of "tiredness" is….EXERCISE!

How to Get Started

Hopefully, even before surgery, each patient has begun an exercise program. Why? Because medical studies have shown that patients undergoing cardiac or abdominal surgery are more likely to avoid complications and leave the hospital earlier if they engaged in an exercise program before surgery. After surgery, exercise is also important, for your long-term health and maximum weight loss. Use the first year after surgery to build healthy habits of exercise that will last you for a lifetime!

Right after surgery, the most common (and commonsense) way to start exercising is by walking. While you are in the hospital, see how many times you can circle the surgery ward! After discharging home, pledge to do a daily or twice daily walk. At first, it may only be down to the end of the driveway and back. Gradually, you will see your stamina and energy level increase, and you may be able to walk around the block. By two weeks after surgery, you should have established a routine of at least a few blocks. By one month, you may be in the ½ mile to 2 mile range. Your doctor will then work with you on a customized exercise program. Many times patient rationalize the lack of an exercise program by saying, "I walk a lot every day at work," or "I'm always moving all day long!" While these are great markers of an active lifestyle, nothing replaces dedicated time spent for the express purpose of staying healthy through exercise. Olympic athletes don't stay in world-class shape just by "staying on their feet at work." Remember, while you may find a million reasons not to exercise, it comes down to you to take charge of your life and make it a PRIORITY!

Exercise Tips

- Don't try to do too much, too soon. Start gradually!
- After the first month or two, though, don't settle for an easy routine. You must always push yourself to do a little more, a little faster, or a little farther.
- While weights are a great companion to an exercise program, the CORE of the exercise program is CARDIO (aerobic exercise like walking, running, swimming, elliptical machine, etc.)
- The best exercise program is the one you WILL DO. Don't choose something that you hate, or one that is too hard right away. If you don't like it, you won't do it.
- For older or tender knees, low-impact exercises include walking, elliptical machine, stationary bicycle, or swimming laps.
- Involve your family and friends in exercise. Change your family tree by teaching your children to avoid the misery of obesity and its medical consequences!
- Some patients find a personal trainer to be a good motivator and worthwhile investment. Not everyone needs one, though, so don't worry if this is an expense you can't afford.

AFTER YOUR SURGERY – FIRST TWO WEEKS

As you discharge from the hospital, there are three things that are (or should be) on your mind:

- Controlling pain
- Getting enough fluids and nutrients
- Staying active

Controlling Pain

Realize that using pain medication to treat pain is not weakness: it's the right thing to do. Untreated pain causes unnecessary stress, causes you to not breathe deeply enough, and makes staying active more difficult. So, if you need pain medication, use it. The only problems arise when people use pain medication to treat emotional suffering or psychological needs. If this issue begins to arise, notify your surgeon so appropriate referrals for medical attention can be made.

You may soon get to the point where you only need the pain medication at night to help you sleep comfortably. After a night or two of this, you can safely stop the pain medication, only using over-the-counter acetaminophen (Tylenol®) as needed for routine aches and pains.

Adequate Hydration

Avoiding dehydration is important in the first weeks after bariatric surgery. Your new anatomy (whether band, bypass, or sleeve) will be swollen for some time. This is the body's natural response to injury or surgery. Your pouch or sleeve is already designed to be small – imagine all the swelling making the food and drink channel even smaller! A bottle for sipping fluids must be your CONSTANT COMPANION. If you forget or put it off for even a couple of hours, you will not be able to catch back up easily. The fluids just do not go down in big gulps anymore! Remember the 1 ounce cups you sipped in the hospital, 4 each hour? That is your minimum goal at home, too. If you can do more, super!

Gentle Activity

Remember, walking is the best way to keep active right after surgery. It prevents blood clots, and starts conditioning your body for the more intense exercise ahead.

AFTER YOUR SURGERY – WEEKS TWO TO FOUR

At this point, pain control is usually not much of an issue for most patients. While you may still have some soreness, it is usually manageable without medication. If you've stayed hydrated up to this point, you have likely formed some good habits of sipping fluids all day, and you can start to think about other things besides just drinking fluids.

Stage 3 Diet

After your first post-surgery visit with the surgeon, you will likely be allowed to begin eating pureed foods (Stage 3 diet). As described in the DIET section of the Bariatric Surgery Patient Guide, Stage 3 includes food pureed in a blender or food processor. It also includes foods that are already puree consistency, such as low-fat yogurt, cheese. Introduce one new food at a time, so that if something makes you sick, you can pinpoint that food and avoid it for now. Some foods that you cannot tolerate now may be just fine in three months, so don't give up on that food; just postpone it.

Exercise

You are still limited in lifting or abdominal exercises (crunches, sit-ups, yoga, Pilates), but cardio-type exercises are unlimited, as long as it doesn't hurt and you don't "overdo it" to the point of dehydration or exhaustion. Keep a bottle of water or Crystal Lite® with you, sipping constantly during exercise, so that you don't become dehydrated. Remember, you won't be able to "guzzle" fluids after exercise to make up for the fluids you lost while exercising.

Involve your family in your exercise program, if possible. You are setting a new course for your family, and maybe your spouse, kids, or siblings will see this as the first time they began a healthy lifestyle, thanks to you!

Work

If you work outside the home, you may be starting back to work now, depending on your condition and your surgeon's recommendation. Consider starting slowly, with half-days at first, if your employer allows. Remember that you will be more easily fatigued. Build into your schedule a time for exercise every day, and don't let yourself give excuses for not exercising. Even though exercise is the last thing you may want to do when you feel tired, remember that exercise leads to more energy down the road. Energy begets energy.

AFTER YOUR SURGERY – 1 MONTH TO 3 MONTHS

Healthy Eating

Your surgeon likely moved you along from Stage 3 to Stage 4 foods at the four-week visit. Stage 4 is regular food, but not like most Americans think of regular. "Regular food" to most Americans means fast food, or high-calories processed foods (a package that you open and heat in the microwave), with ingredients that even a chemistry professor would have difficulty interpreting. Start getting in the habit of preparing your own meals at home. This might be a new experience for some! Remember, if you cook your food, you know what is in it. And surprisingly, studies show that we tend to eat fewer calories when we prepare our own food.

The core of a healthy, regular diet is fresh vegetables and fruits, lean meats (chicken and fish), and whole grains. Meal size is still very small; remember, after bariatric surgery your stomach capacity will be somewhere between one and four ounces. Try to eat a small amount of a variety of foods. If one food doesn't "sit well" with you, put that food aside in your mind, and wait a few months to try it again. Many patients will have problems with steak or tough red meat for a while after bariatric surgery. Think about trying these after six months.

Meals should also be slow. Think of mealtimes as an opportunity to share, laugh, talk, and enjoy the company of friends or family. We tend to eat less food, and slower, when we have conversation. Your body needs some time to send "full" signals to the brain. Over time, you will learn by looking at a portion of food whether it will be too much (causing vomiting) or just right. Allowing plenty of time for meals, plus this recognition of just-right portion size, should allow you to succeed with meals without becoming nauseated or vomiting.

Exercise

This is your time to shine with exercise! When your surgeon gives you the go-ahead to return to full, unrestricted exercise (as long as it doesn't hurt), the sky is the limit. Don't try to make huge leaps in the amount or intensity of exercise, but gradually increase the intensity, time, and/or distance in your exercise. For younger patients who have worked up to two miles or more of fast walking, you may consider trying a modified form of what runners call the "Galloway Technique." Try jogging for a minute, then walking for five. Repeat this cycle for your walk. This allows you to catch your breath, but pushes you into the next level of exercise intensity. Over time, you can steadily increase the time spent jogging. Be sure you have a good pair of supportive walking/jogging shoes.

You can also start trying "cross-training," combining weights/toning exercise with cardio, alternating days or doing some of each on the same day. Other ways of changing up your exercise regimen include: spinning or cycling, yoga, swimming laps, Pilates, or circuit training (a method of using several light weight machines in a row to tone different muscle groups). Some patients may enjoy racquetball, basketball, or other ways of burning calories that are fun!

AFTER YOUR SURGERY – 3 MONTHS TO 6 MONTHS

Healthy Eating

During the growing season, your local farmer's market or Community Supported Agriculture (CSA) may be a great place to find healthy, fresh options to include in your diet. Don't be afraid to try new things! Remember to keep fresh vegetables and fruits, lean meats, and whole grains at the core of your new, healthy diet.

Support Group

Stay engaged in the bariatric support group; you may be assured that whatever you are going through, someone else there has experienced the same thing! Make friends, swap email and phone contacts, and stay involved in each other's lives. Find "accountability partners" that you can honestly share your struggles with, and they with you. This will spur you on to success.

Hair Loss

Some patients may experience some hair thinning or loss in the 3 to 9 month period. The most important thing to remember is: DON'T PANIC. In the early period after weight loss surgery (a few months ago), when your calorie intake was very low and weight loss was very quick, some of your body's hair cells went dormant, or inactive. Weeks later, some of the hair from those hair follicles begins to come out, and so you only notice it now. Be patient. In almost all patients, this process stops by 9-12 months, and many times, reverses completely. This may be a good time to get some reassurance from your experienced friends at support group who are not bald, but who are rather very healthy one or more years out from surgery.

There are, however, some things you can do to keep hair loss from being aggravated. Be sure you are getting enough protein in your diet (60-80 grams protein/day). Some patients take biotin, selenium, and/or zinc, although scientific data to back these supplement choices are lacking. They are safe, over-the-counter vitamin and mineral supplements, though, so supplementation is very low risk.

AFTER YOUR SURGERY – 6 MONTHS TO 12 MONTHS

Weight Plateaus

The most rapid period of weight loss is during the first 6 months after surgery. Some patients get discouraged after 6, 9, or 12 months, now that weight loss doesn't come as easy as it did before. Not to worry – as long as you are still eating healthy and sticking with an exercise program, there is more weight loss to come. It is just a little slower now.

Occasionally, patients will worry when the scales show no change over a few days, or when weight fluctuates up and down by a few pounds but doesn't seem to move downward in a definite way. One rule of thumb is this: don't weigh more than once a week. Daily changes in weight are normal (up to 3-5 pounds!), and daily weight can vary depending on hydration, bowel habits, menstrual cycles, and salt intake. When weekly weighing shows a weight plateau, with no change for two or more weeks, it's time then to examine lifestyle for clues why.

Are you at an exercise plateau? The body gets more efficient at an exercise when you have done it regularly. We call this "conditioning", and it's the reason why training for a race or event works: the body gets more efficient at doing the same thing. This has great benefits for cardiovascular health, but it also has a downside for you: the same exercise routine burns fewer calories the more times you do it. Because of this, it becomes necessary for you to either: 1. Change your routine to include different workouts, or 2. Do the same activity harder, faster, or longer. Some patients find that registration with friends for a community fitness event like a 5K or 10K run/ walk can keep them motivated to train hard.

Have you been eating properly? Six months is a long time to restrain appetites or cravings. Some patients "slip" and go back to comforting snacks foods or sweets. Others have expanded their capacity for food by consistently "stuffing" themselves at every meal, resulting in a pouch or sleeve that is stretched out to hold more food at each meal. Whatever the cause, you must be honest with your- self, your surgeon, and if you have one, your accountability partner. Are you only eating meals the size of the palm of your hand?

AFTER YOUR SURGERY – 1 YEAR TO 2 YEARS

Bariatric Support Group

Even though your visits are now only once a year (as long as you're doing well), make a point to try to attend bariatric surgery support group on some regular basis. Although you may not be "in need" of the pointers and encouragement you hear, someone else is! And many new patients, both pre- and post- surgery, are looking to you for your experience and mentorship in their journey toward a new, healthy weight. So come on out and share – you're the experienced veteran now!

Staying Fit

Remember, while the surgery might "hit the reset button" on weight for a year, it's the habits you form of healthy eating and exercise that will last you for the rest of your life. Don't let up now! And don't think of your exercise program as "something to do until I get thinner." Everybody has to exercise to stay thin. No exceptions.

Vitamins

Remember, the daily multivitamin (with iron, for women) and daily calcium citrate + Vitamin D are not just for the first year – they are for life! Weight loss surgery patients, especially women, can be susceptible to osteoporosis. This thinning of the bones can make a person fall victim to a hip fracture, after which many patients do not regain the ability to live independently.

AFTER YOUR SURGERY – 2 YEARS +

Community Change

Be an advocate for healthy living in your community. You've seen firsthand how devastating obesity can be in your life. Don't let the next generation fall victim to this. Challenge your local schools to serve healthier, fresh, local produce instead of canned or high-calorie foods. Be a supporter of community health and fitness efforts. And lead the way yourself with a healthy, fit lifestyle!

Support Groups

Stay involved in your bariatric support groups, even if you move out of the area. There is bound to be one near you; check with local hospitals and health systems to see if there are any near you. These are generally not restricted to patients from that program, but are open to anyone. Not only do the new patients or fresh post-surgery patients need to hear your perspective on lifelong healthy living, you will benefit from the long-term accountability that a strong support group provides.

FREQUENTLY ASKED QUESTIONS (FAQs)

What is the best weight loss surgery?

If there were one surgery that was the best, with the most weight loss, lowest risk, and least side effects, there would not be any others. As it is, though, each of the operations we currently do have their pros and cons. The more you can educate yourself on each surgery, and the more insight you have into your own wishes and values, the easier it is for your surgeon to discuss and make a plan with you.

Will I ever eat normally again?

We do not perform bariatric surgery to make people dependent on protein shakes and vitamin mixes. You will return to eating solid food, at regular mealtimes, with perhaps a healthy snack between meals. The meals are smaller, no question. But if, by "normal", you mean the standard American, no-hold-barred, giant steakhouse platter of fried and calorie-oozing slop, then no, that kind of "normal" is a thing of the past for you. And good riddance! Be prepared, take a cooler everywhere you go with drinks and food that you can have.

I've heard about hair loss after bariatric surgery. Will I have that?

See the section above, AFTER YOUR SURGERY – 3 TO 6 MONTHS, for a more detailed discussion of hair loss. The quick answer is that most patients have some hair thinning or loss in the 3 to 9 month period, and in almost all cases, it stops and reverses after 9-12 months. Any kind of rapid weight loss will cause the hair follicles to go dormant; surgeries that yield greater weight loss have greater risk of hair thinning. Conversely, surgeries that yield less weight loss have less risk of hair thinning or loss.

What are the risks of bariatric surgery?

Bariatric surgery is major surgery and carries risk. This fact should not be minimized, but each patient should also remember that morbid obesity carries significant risk also. The decision about which risk to take is highly personal, and only you can decide that.

I've read on the Internet about bariatric surgery, but I don't know what to believe. How do I make sense of it all?

The internet is full of information – good, bad, and dangerous. Chat rooms or forums can be helpful in showing other patients' experience, but remember that those patients are in a different program, with different surgeons, different expectations, and different risk factors all contributing to their ultimate outcome. Reputable major university surgical programs (such as the Mayo Clinic, Vanderbilt University, or others) will often have reliable information. Our own website/blogspot at ABQ Health Partners is designed to be a resource for patients desiring more information. Take what you read on the internet with a grain of salt, but don't let it discourage you from doing research. The more informed you can be, the better!

I've heard some people can get kidney stones after bariatric surgery. Why would I want to take extra calcium? Doesn't that cause kidney stones?

We still believe that the risk of osteoporosis is significant, and encourage our patients to take their supplemental calcium. There is no evidence to suggest that this increases risk of kidney stones. There is some data to suggest that kidney stones may form due to not enough calcium in the diet. Some patients may have kidney stones that form after bariatric surgery due to certain compounds in protein supplements, or from the changes in metabolism that occur after bariatric surgery.

If I smoke, can I still have surgery?

No, you must quit smoking for two months prior to surgery.

Is it true that bariatric surgery is not a quick fix?

Due to the risks and possible complications patients with the following are not guaranteed to be candidates for bariatric surgery and whose cases will need to be discussed on a case by case basis with their surgeon:

- 65 years old
- 60 BMI
- Scooter or wheelchair bound
- Patients on oxygen

ADDITIONAL RESOURCES

The following informational tools are available for patients, although the reliability of each has not been verified. Their listing here does not imply that these resources are endorsed by DaVita Medical Group.

obesityhelp.com	One of the largest website for bariatric patients, with chat forums, provider and health system profiles, and information about bariatric procedures.
wlslifestyles.com	Weight Loss Surgery Lifestyles, an online magazine with informational articles tailored toward weight loss surgery patients.
bariatriceating.com	Some helpful hints and recipes for healthy eating, heavily oriented toward promotion of product sales.
bsciresourcecenter.com	Bariatric Support Centers International

ABBREVIATIONS

BMI	Body Mass Index
GERD	Gastroesophageal Reflux Disease
NSAID	Non-Steroidal Anti-Inflammatory Drugs (Aspirin, ibuprofen, naproxen, ketorolac, meloxicam, celecoxib)
PCP	Primary Care Provider
PSA	Prostate-specific antigen
VBG	Vertical Banded Gastroplasty (an older bariatric procedure not in current use)

GLOSSARY

Body Mass Index	A ratio of height to weight, allowing comparisons between patients of differing heights. BMI=weight (kg)/height (m^2)
Ghrelin	The “hunger hormone” that signals hunger to the brain. Much of it is produced in the fundus of the stomach, the portion removed in vertical sleeve gastrectomy
Homeostasis	The body’s process for adapting to change in order to keep the status quo
Morbid obesity	Specifically, a BMI greater than 40. More generally, any obese patient with severe medical problems arising from excess weight.
Satiety	The feeling of “fullness”, or satisfaction after a meal
Vertical Banded Gastroplasty	An older bariatric procedure not in current use. VBG involved stapling a portion of the stomach and restricting food intake by a prosthetic ring inserted around the food channel.

The surgery does not work for the patient;
the patient works for the surgery.

The surgery does not make our food choices.

The surgery does not drink our water.
The surgery does not do our exercise.
The surgery does not choose to follow or break the rules.

The patient makes the choices;
the patient works for the surgery.
– *Kaye Bailey*

We look forward to working with you through your journey to a healthier lifestyle.

Please remember to call
the DaVita Medical Group Bariatric Clinic
at 505-262-7281 (TTY: 711)
once you have completed your pre-op testing.