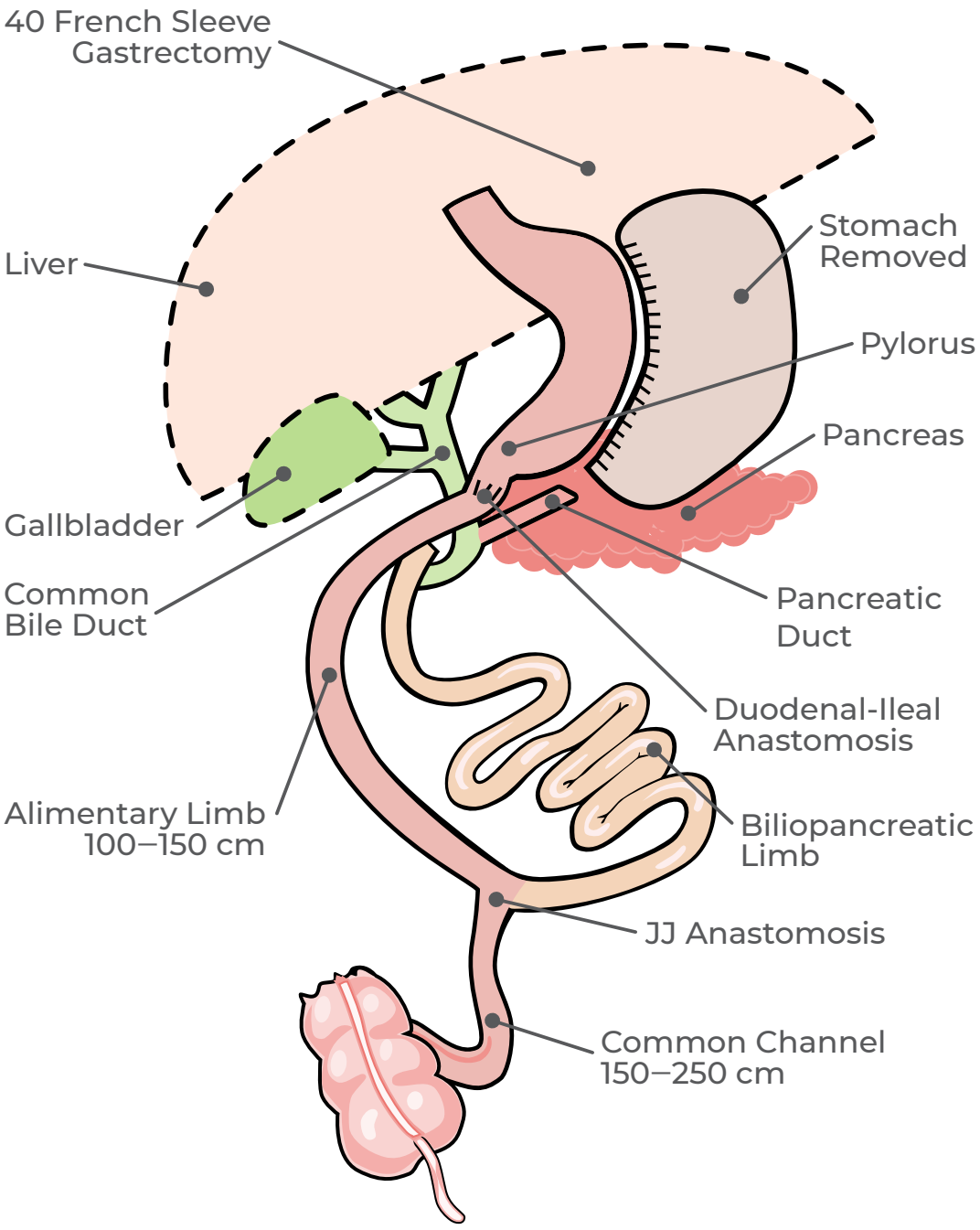
Memorial Health

Bariatric Procedure

Duodenal Switch

Congratulations on your decision to pursue the duodenal switch (DS) procedure.

When combined with lifestyle changes, this surgery is a very useful tool to help you lose weight and keep it off. On average, people who have had duodenal switch lose about 80 percent of excess weight or 40 percent of total weight. In addition to losing weight, most people gain self-confidence and improve their quality of life after surgery. The Memorial Wellness Center is excited to walk alongside you and support you as you start down the road toward better health. Thank you for choosing us to be a part of your journey.



DUODENAL SWITCH

RESTRICTIVE AND MALABSORPTIVE

Duodenal Switch Procedure Overview

- The duodenal switch procedure removes 80 percent of the stomach and reroutes a portion of the small intestine.
- In performing the duodenal switch, a sleeve gastrectomy is performed to reduce the size of the stomach. The stomach is restricted by stapling and dividing it vertically. The portion of the stomach that receives food is shaped like a very slim banana or a sleeve (150 cc).
- The first part of the intestines, the duodenum, is left connected to the new stomach sleeve. The valve at the outlet of the stomach (pylorus) remains in place and provides normal stomach-emptying. This allows for the feeling of fullness, regulates emptying and glucose homeostasis.
- Further down the duodenum, the intestine is divided just before the area where bile and digestive juices from the pancreas enter the digestive tract. The lower end of the small intestines is also divided and then brought up to connect to the duodenum. This creates the "alimentary limb."
- The other end of the bypassed small intestines that will carry the digestive juices (called the biliopancreatic limb) is reconnected to the small intestine further down the digestive tract (common channel) 100–125 cm from the colon.
- The DS procedure provides restriction while significantly reducing the absorption of nutrients.

Benefits

- Following duodenal switch procedure, most patients lose weight extremely rapidly and continue to lose over the next 24 months postoperatively.
- Patients lose, on average, more than 80 percent of excess weight or 40 percent of total body weight—a higher rate of weight loss than other bariatric procedures.
- DS is also associated with lower rates of weight regain (6%).
- DS can be done as a single procedure (a complete DS) or in two stages.
- DS can be used as a revisional procedure for weight regain in patients who have undergone vertical sleeve gastrectomy, adjustable gastric banding and roux-en-y gastric bypass.
- This procedure has the highest level of improvement and resolution in type 2 diabetes mellitus, at 97 percent remission.
  - Patients on insulin less than 10 years: 88 percent remission.
  - Patients on insulin more than 10 years: 66 percent remission.
- After this procedure, patients require significantly more calories compared to other bariatric procedures, which leads to higher calorie consumption with greater weight loss.

Possible Risks

Complications of duodenal switch can occur shortly after surgery or develop over time.

- Blood clots affecting the legs are more common in overweight patients and carry the risk of breaking off and being carried to the lungs as a pulmonary embolus (DVT/PE). This is why we follow a standardized clinical pathway to help prevent blood clots, including having patients quit smoking and remain smoke-free for at least six months, speedy operations, early ambulation after surgery, use of compression boots during the procedure and hospital stay, use of blood thinner after surgery and anti-embolic exercises.
- The most serious early complications include leaks at the suture line of the sleeve and junctions where the small intestines are bypassed and reconnected, forming a new connection or anastomosis. This dangerous complication usually requires emergency surgery. Duodenal switch is a longer operation than other bariatric surgical procedures, which is also associated with increased risks.

- Bleeding can occur in 1–2 percent of patients at the time of surgery or early post-op. Blood transfusion, reoperation or endoscopic procedures may be warranted.
- Intestinal obstruction—a blockage in the intestine—occurs in approximately 2 percent of patients, an occurrence rate similar to that following any general surgical abdominal procedure.
- Any obese patient having surgery is at risk for certain complications, including degrees of lung collapse (atelectasis) which occur because it is difficult for the patient to breathe deeply when in pain. A great deal of attention is paid in the postoperative period to encourage deep breathing, use of an incentive spirometer and patient activity to try to minimize the problem.
- Stricture is a narrowing at the anastomosis (the junction where the small bowel is reconnected), which results from scar tissue development. With a smaller opening, even a little scarring will squeeze the opening down to a degree that affects the patient's eating. This may cause vomiting and is more likely to occur between meals.
- Over the age of 45, certain diseases, such as congestive heart failure (CHF), chronic renal insufficiency (CRI), chronic obstructive pulmonary disease (COPD) and severe morbid obesity (BMI > 50), type 2 diabetes, and excess weight can increase your risk for surgery. Male gender is also a risk factor. There are also risks that come with the medications and methods used in the surgical procedure.
- Malnutrition is another problem after duodenal switch, due to deficiencies in calories, protein, vitamins and minerals. There are multiple problems that can occur due to vitamin and mineral deficiencies, especially over time.

  More common deficiencies following the duodenal switch include iron, B12, calcium and fat soluble vitamins (A, D, E and K). Vitamin and mineral deficiencies and complications from them are more common after duodenal switch compared to other bariatric surgical procedures due to the amount of malabsorption following this procedure. Some of these problems are extremely serious and can be irreversible. These include, but are not limited to, metabolic bone disease, anemia, fatigue, cognitive changes, hair loss and numbness and tingling in extremities (neuropathy).

  Lifelong follow-up and vitamin mineral supplementation is required after duodenal switch. All patients should take supplemental vitamin and mineral products as recommended by the program dietitians.
- Gas and diarrhea are common side effects after duodenal switch. Excessive and foul-smelling gas can be related to one's dietary intake. High-sugar foods, certain carbohydrates, artificial sweeteners, fiber, high-fat foods and carbonation can all cause or increase excessive flatulence. Oily, loose diarrhea, known as steatorrhea, can occur as a result of eating high-fat foods.

  It is important to differentiate between excessive flatulence and loose stools with the inability to control bodily functions or incontinence. Incontinence may be caused by an unrelated surgical problem with a different cause which would need further attention. Issues with increased flatulence and loose bowel movements are typically managed by changes to the diet and the addition of probiotics to help control these side effects. Studies have reported the average number of bowel movements per day post-op to be approximately three. With persistent frequent loose stools, there may be an increased risk for dehydration, electrolyte imbalances and malnutrition.

Risks

- Mortality rate: 0.5%
- Highest risk of complications among bariatric surgeries. Thirty-day complication rate is 10–30 percent.
- Longer surgery time (2.5 hours) and longer hospital stay (2–3 days)
- Highest risk for diarrhea and malabsorption
- Foul-smelling stools/gas/diarrhea, especially with sweets and/or fat
- Risk of excessive weight loss
- Protein calorie malnutrition (PCM) with excess weight loss occurs in 5 percent of patients and is usually related to poor compliance with nutrition recommendations.
- Vitamin/mineral deficiencies (mild, moderate to severe), especially with poor compliance with life-long supplementation
- Risk of kidney stones

Blood Clot (PE/DVT) Prevention

- ○ No smoking; must be smoke-free for three months prior to surgery
- ○ Stop hormone replacement therapies (estrogen/birth control pill, patch or ring) one month prior to surgery
- ○ Compression boots during surgery and during hospital stay (when in bed)
- ○ Stop steroids for 90 days
- ○ Early ambulation (anticoagulation)
- ○ Blood thinner during hospital stay
- ○ Anti-embolic exercises (exercises to prevent blood clots)

Popular myths about bariatric surgery include:

MYTH: You'll never regain your weight.

TRUTH:
While most patients will lose weight consistently over the initial 12–24 months post-op following duodenal switch, there may be a 5–10 percent weight regain or rebound from the lowest weight achieved. In order to maintain weight loss after the duodenal switch surgery, it's essential to sustain lifestyle changes regarding nutrition, activity, stress management and healthy coping skills.

MYTH: You will never be hungry after surgery.

TRUTH:
Most patients require additional calories and protein to maintain optimal nutritional status following the duodenal switch. Patients will feel initial restriction due to the gastric resection (sleeve gastrectomy component of the operation), but over time, patients do experience hunger.

MYTH: You can't eat "normal" food for the rest of your life.

TRUTH:
There will be a progression after the duodenal switch surgery from liquids to soft solids and so on until you have incorporated most foods back into your diet. Portion sizes will also go through a progression. Patients require more calories and protein due to the amount of malabsorption that occurs following this procedure. There are no "special" foods; however, there are foods that may cause more side effects (flatulence, oily stools), such as high-fat and high-carbohydrate foods. However, you can still enjoy the same foods as your family, at home and even out at a restaurant.

MYTH: Weight-loss surgery is an easy way out.

TRUTH:
All weight-loss surgery programs are different. However, surgery alone does not "fix" everything. It takes a lot of work from you to be successful. Behavioral changes serve as a foundation and are essential for long-term success.

MYTH: You'll be happy after surgery.

TRUTH:
Surgery itself will not make you happy. If there are underlying issues that are not addressed as part of your journey, they will continue to impact your happiness even after surgery.

MYTH: You will have a great body.

TRUTH:
Your body will go through tremendous change. The impact of obesity on your body, such as loose skin, may still be seen and felt after weight loss. This will likely be a journey as well from body "tolerance" to body "acceptance" to body "compassion."

MYTH: Weight-loss surgery will save your marriage.

TRUTH:
If there are any issues in a relationship prior to surgery, these may become more apparent afterward. The weight-loss journey can be an added stressor on the relationship. Open communication is important and your team has resources to help facilitate ways to navigate this journey with your spouse or support person.

MYTH: You don't have to exercise to lose weight after surgery.

TRUTH:
You do need to incorporate exercise into your lifestyle for long-term success after duodenal switch surgery. Early post-op, you may lose weight rapidly; however, exercise is important in maintaining muscle mass. Muscle mass is essential for weight maintenance.

Understanding the Recommendations for Bariatric Surgery

Why are structure and planning so important after bariatric surgery?

After duodenal switch surgery, patients have an increased need for nutrition, especially calories, protein and vitamins and minerals. Maintaining regular meals and snack times will help ensure you are taking in enough nutrition to support weight loss, maintain lean body mass during weight loss and set you up for good habits for weight maintenance.

During this process, the many changes and recommendations from the multidisciplinary team can be overwhelming. Understanding the "WHY" behind all of these recommendations can be helpful.

Why do I have to take bariatric vitamins?

Duodenal switch changes the way your digestive system works by bypassing a major portion of your small intestine, causing significant malabsorption. Your stomach is also reduced in size. This reduces breakdown of nutrients within the stomach and also changes the pH of the stomach. This affects the body's ability to absorb certain nutrients. The risk of developing a deficiency increases as time goes on after surgery. This is why you must take bariatric vitamins for your whole life after duodenal switch. Bariatric vitamins are specially formulated to help prevent deficiencies, some of which have irreversible complications. They contain higher levels of certain micronutrients than regular vitamins and many of the nutrients are in a specific form to help them be better absorbed.

Why do I have to wait to get pregnant following the duodenal switch surgery?

Women of childbearing age, or who have suffered from infertility prior to bariatric surgery, have the ability to become pregnant in the early postoperative stages due to improvements in hormone regulation or failure to implement a contraception plan. Increased risks exist to the mother and fetus during this time of rapid weight loss and following a significantly malabsorptive procedure such as the duodenal switch, including:

- Greater incidence of premature birth
- Difficulty meeting maternal weight-gain goal to promote appropriate fetal growth
- Increased metabolic and vitamin/mineral disturbances resulting in growth retardation and neural tube defects
- Greater risk of miscarriage
- Increased risk of malnutrition for mother and fetus with restricted oral calorie and protein intake
- Increased incidence of cesarean deliveries
- Greater fetal mortality rates

For these reasons, it is required that a plan for pregnancy prevention (barrier, intrauterine, condoms or stated abstinence/denying sexual activity) be in place to prevent pregnancy and the high risks that accompany it after duodenal switch surgery. Oral birth control is not a preferred method of contraception postoperatively because the malabsorption mechanism present after surgery makes it ineffective. A documented plan for pregnancy prevention will be developed during the preoperative evaluation phase if you are identified as a safe candidate for bariatric surgery.

Why can't I smoke or use nicotine products?

Memorial Wellness Center (MWC) requires patients to eliminate the use of nicotine (cigarettes, cigars, chew, hookah, e-cigarettes, patches and other nicotine-replacement therapies) three months prior to bariatric surgery and to remain abstinent from nicotine after surgery. This reduces the incidence of postoperative risks. Here are a few reasons why:

- The use of nicotine, whether passive or active, increases surgical risks for developing complications, such as:
  - Decreased oxygen to your heart
  - Poor wound healing due to loss of blood flow
  - Increased risk of wound infection
  - Increased risks of chest infection and pneumonia
  - Increased risks of blood clots
- Smoking makes liver enzymes metabolize anesthesia drugs differently, changing the effect and duration of anesthesia and making it less predictable.
- Nicotine users tend to require more pain management medications after bariatric surgery.
- Nicotine use increases the risk of postoperative ulcers, which can lead to perforation or GI bleeding.

Research shows that individuals who have assistance with being nicotine-free are more successful. If you are interested in becoming nicotine-free, please call 866–205–7915 to discuss the tobacco cessation tools available to you through our program.

Why is support important after bariatric surgery?

One of the most powerful things you can do to help with your weight-loss and management efforts is to receive support and encouragement from other people. When others encourage you to keep working, you feel like you can do anything! **Consider this:**

- Ask others for encouragement in your weight-control efforts. Ask key people whom you know will be positive and supportive.
- Share your concerns and struggles with those key supporters.
- Explain what they can do to help. Be specific. For example, "Ask me how I am doing, then listen," or "Please don't offer me junk food."
- Let them know their support is meaningful to you and describe how you need their encouragement for the long run.
- Even if a support person fails to ask how you are doing, go ahead and tell them. This starts the conversation and provides an opportunity for encouragement.
- Give back in return. Reward your support people with your attention and your support for them.

Memorial Wellness Center also offers opportunities for support outside of our clinic. Some examples include:

- Support groups
- MWC Facebook page
- MWC secret Facebook groups
- Support person booklet

SUPPORT

Studies show that bariatric surgery patients who attend support groups maintain about 20 to 30 percent greater excess weight loss as compared to patients who do not attend support groups. We offer both in-person and online ways to connect!

Bariatric surgery support groups are led by one of our licensed healthcare professionals. Participants can share knowledge and support on the journey to improved health.

Private Facebook Page. These online communities provide support to our patients by our patients at any time. This is a safe space to share non-scale victories, new and delicious finds as well as ask questions to those that understand firsthand about life after surgery.

Why do I have to worry about certain types of medications after duodenal switch surgery?

Certain medications are not absorbed in the same manner after duodenal switch surgery. The pH of your stomach is altered. The rate of how quickly things move through your GI tract is changed. The same biological changes that increase your risk of nutritional malabsorption can also impact the way your body absorbs medications. After surgery, pills have less time to dissolve in your stomach, the acid/pH level of your stomach changes and the absorption process in the small intestine is impacted. As a result, there are changes in both the anatomy and chemistry of your digestive tract.

It is reasonable to hope to experience a reduction in medications following bariatric surgery and significant weight loss. Medications for diabetes, hypertension and asthma are often significantly decreased or eliminated. However, the need for antidepressants and other psychological medications is less likely to be reduced. Be sure to consider how your body will process these medications after your surgery.

After bariatric surgery, smaller, more frequent doses of medication may be needed. In general, extended or sustained-release medications are not recommended after surgery. Medications in capsule form are also not recommended after surgery. The exception to this is the bariatric multivitamin, which is specially formulated for bariatric surgery patients and acceptable in capsule form. Talk with your doctor, who will decide what, if any, changes will be made to your medications.

Informed consent for bariatric surgery requires you to understand the potential for long-term, permanent problems while using medications to manage depression or other psychological problems. If you start to notice an increase in your depressive symptoms after surgery, contact your doctor immediately to discuss these issues.

Why do I have to journal my food intake after bariatric surgery?

Keeping a food journal, or logging your intake, is the best way to record what and how much you take in. This helps ensure you consume enough calories and nutrients. Patients often overestimate how much they are eating postoperatively. Logging helps to ensure you take in enough calories and protein throughout the day to prevent malnutrition and fuel your daily activities as well as your exercise. Writing down what you eat can also help you monitor your tolerance to certain foods. Long-term studies on weight maintenance have shown those who log maintain more weight loss than those who do not.

Why is fluid so important?

Dehydration is one of the most common complications after bariatric surgery. Avoid this complication by ensuring that you drink the recommended 64–80 ounces of fluid daily. After surgery, you are only able to drink 1–2 ounces over a 15-minute time period. You should also avoid drinking prior to, during or directly after your meals. This provides limited time in which you are able to drink hydrating (caffeine-free) fluids. After surgery, you are not able to consume large amounts of water at one time, so you have to be sure to drink fluids throughout the entire day. Your hydration needs will also increase with frequent loose stools, as fluids and electrolytes can be lost with diarrhea.

Why can't I drink caffeine or carbonated drinks after bariatric surgery?

Both caffeine and carbonation can irritate the stomach. Caffeine is a diuretic, which means it increases urine production, which counteracts our efforts to keep you hydrated. Carbonation introduces air into the stomach and causes bloating, discomfort and flatulence. Caffeine can also increase gastroesophageal reflux disease symptoms.

Why can't I drink alcohol after bariatric surgery?

Memorial Bariatric Services requires patients to eliminate the use of alcohol before having bariatric surgery and to remain abstinent from alcohol after surgery. This reduces the incidence of postoperative risks. Here's why:

- Alcohol affects absorption of vitamins and minerals. Alcohol is a diuretic and can decrease the vitamins and minerals stored in the body.
- Alcohol can lead to dehydration. After bariatric surgery, it will take you a minimum of 6-10 hours a day to drink the required 64–80 ounces of fluid daily. (You cannot drink with meals, which accounts for approximately five hours out of the day, and you cannot drink while you are sleeping, which for most individuals is six to eight hours out of the day.) Consuming alcohol means that it will take more time for you to hydrate.
- Your body absorbs alcohol faster after surgery, which increases your blood alcohol content (BAC). In one study, individuals who drank one serving of alcohol were past the legal limit of .08 percent within 10 minutes of drinking.
- You will have an increased risk of becoming dependent upon or abusing alcohol. The faster you feel the effects of a substance, the more likely you are to become addicted.
- Your body will take longer to eliminate alcohol. Even though you can become intoxicated more quickly, the time it takes your body to sober up will increase.
- Alcohol leads to an increased risk of developing ulcers.
- You can experience an increase in heartburn if the alcoholic drink is carbonated.
- Alcohol is empty calories. There are no nutrients in alcohol, so your body is not able to use the calories for daily functioning. Unnecessary calories can also lead to weight gain.

Why do I have to practice mindful eating—eat slowly, take small bites and chew food thoroughly?

These strategies will help you to be more aware of your eating habits. After duodenal switch, your stomach is small, about the size of a small banana, and does not have as much of the acids that help with breakdown and digestion. It is important to chew food thoroughly to help with the digestion process. Take small bites to ensure you are chewing your bites thoroughly. Eating too fast can lead to frothing or foamy, mucus-like vomiting.

Why do I have to go on a two-week presurgical diet?

The presurgical diet, which is low in calories and high in protein, helps reduce the size of the liver prior to surgery. This helps decrease surgical risk and improve the outcome of surgery.

Why can't I just drink protein shakes after surgery?

Eating is essential to living a healthy lifestyle. Learn to eat a variety of foods to ensure you consume the nutrients you need. Chewing is a fundamental part of eating and helps your body recognize when it is full. Without chewing, your mind may trick your body into thinking it is hungry when it is not.

Why do I have to take so much time off after surgery?

Adjusting to life after bariatric surgery takes time. Immediately postoperatively, you will track your intake and fluids to ensure you stay hydrated and consume enough nutrients. Without hunger cues, you may forget to eat, and it is easy to forget to drink. Ensuring you are getting the fluids and nutrients you need each day will be the more important task. Your body also needs time to heal from the procedure. Recovery is different for everyone. The length of time off after surgery will depend on the surgery type, pain management, adjustment to changes and tolerance of intake.

Why do I continue to see my bariatric team after surgery?

After surgery, you are part of our family. Follow-up with your team is important so they can provide support and ensure you experience the optimal results. Remember, weight loss and maintenance is a journey, and we are here to help if you feel you are struggling. We can also help assess structural reasons for weight regain. Surveillance of long-term complications such as strictures and vitamin or mineral deficiencies is also very important. After a duodenal switch, you are at a much higher risk of developing a vitamin or mineral deficiency as well as protein malnutrition, which can be very serious if not treated promptly. Lifelong vitamin/mineral supplementation and routine follow-up are critical following a duodenal switch.

Why do I have to make all of these changes before surgery?

Demonstrating the recommended changes prior to surgery helps the team identify you as a safe candidate. It also helps you begin to practice habits that will help you to be successful both pre- and postoperatively. Furthermore, if you are pursuing a duodenal switch after a sleeve gastrectomy (or in two stages), the bariatric team must see superb compliance after the sleeve procedure in order to proceed with the duodenal switch (second stage).

Why is protein so important? Why do I have to take protein supplements after surgery?

Protein is emphasized, especially following a duodenal switch procedure. Early post-op, it supports recovery and is essential for maintaining muscle mass during weight loss. During this phase, the main source of protein will come from liquid protein supplements. Long-term, adequate intake of protein is crucial to prevent protein malnutrition due to the malabsorptive state of the duodenal switch.

Why does it matter what kind of protein my shake contains? Protein is protein, right?

The kind of protein in your protein shake matters a lot! After duodenal switch, you will need to consume a significant amount of protein. In the early weeks after surgery, only a small portion of this will come from your solid foods. During this phase, your chosen protein shake will give you the majority of the protein you take in each day, so it needs to be a high-quality protein.

MWC recommends protein supplements that contain whey protein isolate or whey protein hydrolysate as the best choice for protein shakes. Whey protein is a complete protein, which means it contains all the amino acids your body needs to build and maintain muscle while burning fat. Protein shakes that contain whey concentrate are generally not recommended. These products do contain protein, but it is usually not as much as the isolate or hydrolysate forms and may also contain lactose (milk sugar) and fats, which are not always tolerated in the early weeks after bariatric surgery. Whey protein isolate or hydrolysate is the highest-quality protein.

What kind of protein powder should I buy? How should I shop for a protein powder?

There are many suitable protein products available. In fact, there are so many acceptable products that shopping for a protein powder can be overwhelming at first. But once you know what to look for, it's quite simple. Find a product that fits in your budget, one you tolerate well and one that tastes acceptable to you.

LIQUID PROTEIN SUPPLEMENTS

What to look for on the nutrition label:

At least 20 grams of protein per serving

Less than 6 grams of sugar per serving

Look at the ingredient list.

Whey protein isolate or hydrolysate should be listed as the first ingredient.

Brands to try:

BRAND	ORDER INFORMATION	CONSIDERATIONS
Nectar	MyBariatricPantry.com Vitacost.com GNC store Amazon.com	Not all Nectar brand products contain the recommended form of protein. Also, some contain caffeine. Make sure to read the label.
Isopure	GNC store Amazon.com	This is a clear liquid drink. There are 40g of protein per bottle.
Beneprotein	Walgreens.com Amazon.com	This one comes unflavored. Serving size on label is small, so you may need to put more than one serving in each of your protein shakes to consume enough protein.

These are not the only acceptable brands, but these are some suggestions to get you started.

What vitamin and mineral supplements can I use?

There are four baseline vitamin/mineral supplements you will take after duodenal switch:

Bariatric multivitamin* | **Calcium** *(usually as calcium citrate)*** | **Vitamin B12** | **Iron****

** A bariatric-formulated multivitamin is required.*
*** Calcium and iron supplements must be taken at least two hours apart to maximize absorption.*

What kind of vitamins should I buy? How do I know which is the right vitamin for me?

There are many brands of bariatric vitamin and mineral supplements on the market, but not all of them meet the specific recommendations of the MWC. Our recommendations rely on peer-reviewed research, consultation with other bariatric nutrition experts from all over the country and more than ten years of experience in our own clinic. Vitamin and mineral deficiencies do occur in some people who have had gastric bypass. Taking vitamins that meet the recommended guidelines should help prevent them. Your dietitian or medical provider can assist you with any questions you have about bariatric post-op vitamins and make sure the ones you choose will meet your nutrition needs.

There are a few things to remember when speaking with your dietitian about which vitamin is right for you:

Iron: After duodenal switch, your ability to absorb iron is reduced. This means that after surgery you will need to take significantly more iron than you did before surgery. For best tolerance, we recommend the iron you take be in the ferrous fumarate form. For best absorption, we recommend that iron be taken at least two hours before or after any calcium supplements, calcium-rich foods and any decaf coffee or tea. Iron supplementation can cause constipation and you may need to take a stool softener with your supplementation.

Vitamin B12: Having a duodenal switch reduces your ability to absorb B12 with your digestive system. For this reason, we recommend you take either a sublingual (dissolved under the tongue) or an injected form of vitamin B12.

ALWAYS REMEMBER:

The risk of vitamin deficiencies increase over time. Scheduling your labs every year on time helps identify and stop the progression of vitamin and mineral deficiencies.

Micro-nutrient Supplement

	CONSIDERATIONS	HOW MUCH TO TAKE	SUGGESTED BRANDS
Multivitamin	Supplements may be in capsule, tablet or chewy form. Must ensure adequate fat-soluble vitamin content and form.	Look at the label to determine the full daily serving size. Most post-op multivitamins need to be taken 2–4 times per day.	We recommend your multivitamin always come from one of these two brands: Bariatric Advantage and Celebrate. You and your registered dietitian will work together to determine appropriate multivitamin options.
Calcium	Doses should be 500–600 mg (milligrams). Needs to be from calcium citrate. Total amount of vitamin D provided by your calcium and multivitamin should total no more than 3000 IU daily.	Women should aim for a total of 2000 mg (four doses) daily from supplements and food sources. Men should aim for a total of 1500–2000 mg (three to four doses) daily from supplement and food sources.	Bariatric Advantage Calcium Citrate Chewable Celebrate Calcium Citrate Chewable There are many tablet and soft-chew forms of calcium citrate available over the counter and from bariatric companies. Make sure you read the labels too.
Iron	Ferrous fumarate is best tolerated by most people; however, there are several acceptable forms. Make sure to separate from calcium-rich foods, calcium supplements and coffee/tea by at least two hours. Taking vitamin C with iron improves absorption.	Menstruating women should aim for 60 mg iron daily. Women who do not menstruate and men should aim for 45 mg iron daily.	Bariatric Advantage/ Celebrate soft-chew (look at dosage) Vitron C Ferretts (look at dosage), take with 500mg vitamin C
B12	Needs to be either sublingual or injected	1000 mcg (micrograms) each week if taken sublingually. 1000 mcg taken each month if injected.	There are many OTC brands of sublingual vitamin B12. Injectable form is available by prescription only.
Other	Additional supplementation of vitamin or minerals may be warranted based on clinical symptoms and laboratory values.	Amounts of additional vitamin and mineral supplements at therapeutic levels will depend on your laboratory values and clinical symptoms.	

What are the metabolic complications of bariatric surgery?

It is important to understand the possible complications following the duodenal switch procedure related to vitamin and mineral deficiencies.

Metabolic Complication

	CLINICAL FEATURES	POSSIBLE INTERVENTION
Acid-base disorder	Metabolic acidosis, ketosis, metabolic alkalosis	Bicarbonate orally or intravenously
Bacterial overgrowth	Abdominal distention, pseudo-obstruction, nocturnal diarrhea, proctitis, acute joint pain	Antibiotics Probiotics
Electrolyte abnormalities	Low calcium, potassium, magnesium, sodium or phosphorus levels	Intravenous or oral repletion
Fat-soluble vitamin deficiencies	Vitamin A—diminished night vision Vitamin D—osteomalacia Vitamin E—rash, neurologic Vitamin K—blood clotting issues	Additional amounts of fat-soluble vitamin supplementation and close nutrition monitoring with the program dietitian
Folic acid deficiency	Anemia Fetal neural tube defects	Folic acid supplementation
Iron deficiency	Anemia Fatigue	Additional amounts of iron supplementation with vitamin C
Osteoporosis	Fractures	Dexa scanning, calcium and vitamin D supplementation Bisphosphonates
Oxalosis	Kidney stones	Low oxalate diet Potassium citrate Probiotics
Secondary hyperpara-thyroidism	Vitamin D deficiency Negative calcium balance Osteoporosis	Dexa scanning, vitamin D and calcium supplementation Additional lab surveillance
Thiamine deficiency (vitamin B1)	Wernicke-Korsakoff encephalopathy Peripheral neuropathy BeriBeri	Thiamine intravenously followed by large-dose thiamine orally
Vitamin B12 deficiency	Anemia Neuropathy	B12 intramuscular
Zinc deficiency	Hair loss Neuropathy Anemia Decreased immune function	Additional amounts of zinc supplementation with copper

What Should I Do to Prepare for Surgery?

STAY PSYCHED UP

- ○ Keep focused on the reasons you want to have surgery.
- ○ Weight plateaus happen.
- ○ Keep a record of your journey (pictures, measurements, ups and downs).
- ○ Write a letter to yourself at the start of your journey to remind yourself of the reasons that you are making these changes.
- ○ Keep a log of your successes.

FAMILY AFFAIR

- ○ Once you decide to have the surgery, talk this over with your children and family.
- ○ Identify the reasons you want surgery.
- ○ Outline what they can do to help.
- ○ Provide a list of chores/activities for each family member when you return home.
- ○ Consider how things will be different while making lifestyle changes.
- ○ Allow the family to have some control over tasks and meals.

PREPARE YOUR HOME

- ○ Stock your kitchen.
- ○ Think sugar-free, carbonation-free and popsicles. Do not forget the popsicles!
- ○ Create a relaxing environment.
- ○ Use the reclining chair.

TIE UP LOOSE ENDS

- ○ Pay outstanding bills and, if possible, pay a few ahead of time.
- ○ Have medication and vitamins ready.
- ○ Clean your house and do laundry before you go.
- ○ Stock up on activities like books, puzzles, movies and crafts.
- ○ Have a family member come and stay or help with cleaning and laundry.
- ○ Prepare meals for your family ahead of time.
- ○ Order your medical ID bracelet.

MEDICAL ID BRACELETS AND NECKLACES

Be sure to make doctors, nurses and EMTs aware you have had bariatric surgery. Knowledge of your condition will help ensure safe treatment. Your medical alert bracelet or medical ID necklace will alert doctors, nurses and EMTs of your medical history so time is not wasted. We recommend including your name, bariatric procedure, physician or surgeon name and contact numbers.

Helpful sites:

- LaurensHope.com
- American Medical ID: 800–363–5985 or AmericanMedical-ID.com
- AllegroMedical.com
- MedicalIDAlertBracelet.com

Recommended engraving:

Your Name	**Weight-Loss Procedure**
Your Primary Care Physician or Bariatric Surgeon	**Your Primary Care Physician or Bariatric Surgeon Number**

Checklist of Items to Bring to Hospital

NURSING STAFF RECOMMEND:

- ○ CPAP machine (if applicable)
- ○ Incentive spirometer
- ○ This gastric bypass surgery book
- ○ List of all medications, herbal supplements, vitamin/mineral supplements
- ○ Copy of your living will and/or Durable Power of Attorney for Healthcare

PREVIOUS PATIENTS RECOMMEND:

- ○ Underwear
- ○ Personal hygiene toiletries
- ○ House slippers with non-slip soles
- ○ Lip balm (such as Chapstick)
- ○ Pen and paper or notebook
- ○ Protein supplements (if desired)
- ○ Sugar-free drink mix sticks (such as Crystal Light)
- ○ Books or magazines
- ○ Small change for newspaper
- ○ Slip-on walking shoes
- ○ Knee-length robe
- ○ Form of payment for copayment for new medications and bedside delivery (such as pain medicine)
- ○ Cellphone charger

REMEMBER:

Do NOT bring large sums of cash.
Label your personal possessions with your name.

YOUR CHECKLIST:

Duodenal Switch Knowledge Assessment Test

Please complete this test and bring it with you to your next visit with your surgeon. We will review it together and answer any questions you may have. Please use the written education material in your bariatric manual as a reference.

The following statements are either TRUE or FALSE. Please circle the correct answer.

1	Clinically severe (or morbid) obesity is caused by a lack of self- control and laziness.	True	False
2	Duodenal switch surgery is the only procedure available for treatment of obesity.	True	False
3	Blood clots and pulmonary embolism are two possible complications from duodenal switch surgery. Blood clots can form in the legs or pelvis. If a clot breaks loose and travels through the veins to the lungs, it is called a pulmonary embolism.	True	False
4	BMI is calculated by using a person's height and weight.	True	False
5	A gastrointestinal leak is one possible complication of duodenal switch surgery.	True	False
6	All people with morbid obesity should undergo duodenal switch surgery.	True	False
7	Duodenal switch surgery guarantees lifelong weight loss.	True	False
8	If I have authorization of payment from my insurance for surgery, I am guaranteed to have the surgery.	True	False
9	Walking (or similar exercise/activity) should begin before surgery and continue daily for the rest of my life.	True	False
10	It is important to exercise and to avoid sweets after duodenal switch surgery.	True	False
11	In order to stay healthy after duodenal switch surgery, I will need to take daily vitamin and mineral supplements for the rest of my life.	True	False
12	Following surgery, I can take any over-the-counter medications. There is no need to consult my surgeon or doctor first.	True	False
13	Diabetes, high blood pressure, back pain and similar ailments always improve after obesity surgery.	True	False
14	Scheduling medical follow-up is the patient's responsibility. Follow-up is lifelong.	True	False
15	Serious complications may occur following duodenal switch surgery. These may require additional surgery, a longer stay in the hospital or a move to the intensive care unit. Complications may mean additional financial costs to the patient.	True	False

This test is not intended to be an exhaustive review of bariatric surgery information, but it does provide a good review and helps ensure you have read and understand the educational material provided to you.

16. When duodenal switch surgery is successful, improvement in associated conditions such as diabetes, hypertension and joint problems is often seen. True False

17. Complications only occur during the hospitalization period after surgery. After discharge, it is unnecessary to call your doctor with concerning problems or symptoms. True False

18. Drinking plenty of fluids after surgery may prevent or decrease the problem of constipation. True False

19. Nausea is a common problem after duodenal switch surgery. True False

20. Weight loss during the first 12 to 18 months after duodenal switch surgery is rapid, but patients who do not follow the exercise requirements, postoperative diet guidelines and follow-up recommendations may eventually regain their weight. True False

21. I may experience hair loss during the first 12 to 18 months after duodenal switch surgery. True False

22. Duodenal switch surgery is a cure for obesity—not just a tool. True False

23. In the absence of complications, the hospital stay after initial duodenal switch surgery is usually two to three days. True False

24. Depression never occurs after duodenal switch surgery. True False

25. I will receive a blood transfusion during or after duodenal switch surgery. True False

The following questions each contain only one correct answer. Please circle it.

26 Which medications must be avoided after duodenal switch surgery?

a) Prescription or over-the-counter medications recommended by your physician

b) Medications for hypertension

c) Medications for depression

d) Lortab, Codeine, Vicodin and other prescribed pain-relief medication

e) Aspirin, Motrin (ibuprofen) and/or any other non-steroidal anti-inflammatory drugs

27 Choose one of the following that may increase the risk of developing potentially fatal pulmonary emboli (blood clots that travel to lungs):

a) Walking four hours after surgery

b) Use of blood thinners

c) Compression boots while in bed during the hospital stay

d) No movement, lying flat at complete bed rest

e) Adequate fluid intake

28 Changes in your digestive system occur following duodenal switch surgery. Which one of the following is completely untrue:

a) Bowel movements may decrease in frequency to once every two to three days.

b) Smells of food may cause nausea.

c) Foods may taste different.

d) Patients may eventually return to their old dietary habits without concern.

29 Keys to long-term success with bariatric surgery are:

a) Commitment to lifestyle changes

b) Daily exercise for the rest of your life

c) Multivitamin and mineral supplements for the rest of your life

d) Adequate water intake and a high-quality protein diet

e) All of the above

30 Which of the following life-threatening complication(s) can occur during or after duodenal switch surgery:

a) Heart attack

b) Stroke

c) Lung failure/pneumonia

d) Blood clots (usually in the legs or pelvis)

e) All the above

I understand this assessment is part of my informed consent and certify I have answered these questions on my own. I also understand I may be asked to retake this assessment and may be required to attend further educational activities if it is found I do not fully understand the risks, complications, requirements and concept of this surgery. I am willing to pursue additional education as recommended by the Springfield Memorial Hospital Bariatric Surgery Program team in order to reduce risks and to increase my opportunity for long-term success and good health.

Patient Signature: Date:

Reviewer Signature: Date:

What should I expect each day at the hospital?

NURSING STAFF

- Nursing staff will check on you hourly to answer questions and help with needs.
- Early in the morning, the bariatric team (surgeons, advance practice provider, dietitian, social worker, pharmacist and nursing staff) will conduct rounds to check on you and conduct teaching, typically at 7 a.m.
- Blood thinner will be given to prevent blood clots.
- Nurses will monitor heart rate, breathing, oxygen levels and blood pressure every four hours, and blood sugar levels every six hours.
- Your bandage will be removed prior to shower.
- Pain medicine will be administered to help with pain.
- You will receive blood draws and continuous monitoring.

PAIN MANAGEMENT

- Remember to let staff know if you are uncomfortable.
- Everyone experiences pain differently.
- Don't delay taking pain medication. Adequate pain control will help you have a smooth recovery.

DAILY CHECKLIST

- Only way to know how much fluid is being consumed
- Helps to prevent dehydration
- Decreases postsurgical complications
- Gives you more control over your healing process and recovery

GET OUT OF BED

Practice at home prior to surgery.

1. Turn over on your right side and cross your left arm over in front of you.
2. Use your left arm to push yourself up so you can swing your legs down.
3. As you start to lift, use your right arm to push yourself up into a sitting position.

SUPPORT PEOPLE

A few things your family member or friend can help with:

- Recording intake of fluids
- Helping with putting on and taking off leg compression boots
- Walking halls at a minimum of five minutes every four hours; more minutes and frequency, if tolerated
- Requesting medication you may need
- Keeping you company
- Making sure you follow recommendations with walks, sips and incentive spirometer

SPEED UP YOUR RECOVERY:

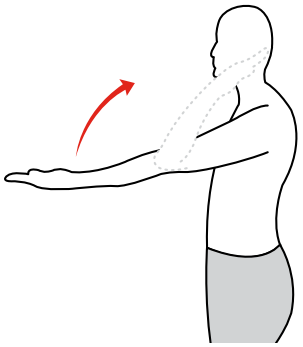
- Walk! Walk! Walk!
- Use Incentive Spirometer
- Sip! Sip! Sip!
- Keep Track

Exercises to Help Prevent Blood Clots

ELBOW:

Elbow Up

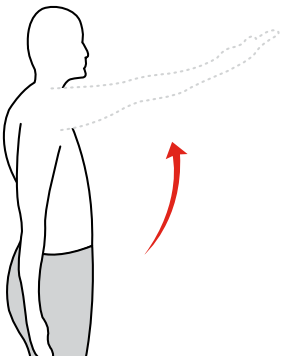
Stand or sit with one arm out in front, palm up. Slowly bend elbow and raise forearm toward shoulder. Relax arm. Repeat with other arm. Repeat 10 times each arm.



SHOULDER:

Range of Motion: Flexion

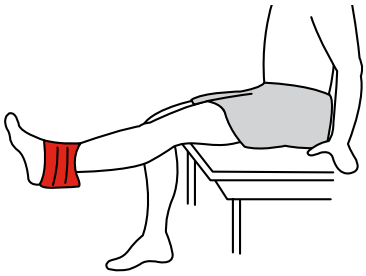
From standing or sitting position, place arms at side. Slowly raise arms up until stretch is felt. Repeat 10 times each side.



HIP/KNEE:

Knee Extension (Sitting)

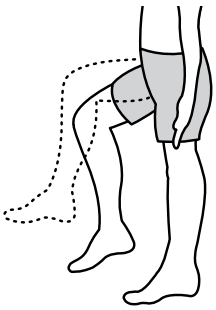
While sitting at edge of bed or in a chair, straighten knee, then let down slowly. Repeat 10 times per leg.



HIP:

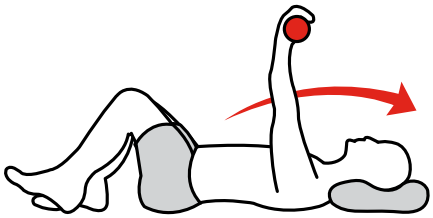
Knee Lift

Using a chair if necessary, march in place 10 times each leg.



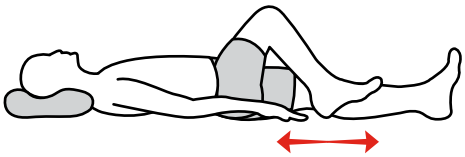
SHOULDER:
Arm Raises

Raise arms over head, and go as far as possible without pain. Repeat 10 times per arm.



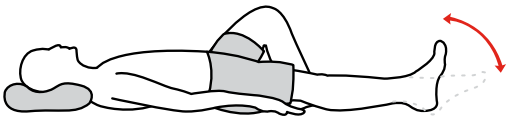
HIP/KNEE:
Self Mobilization—Heel Slide (Supine)

Slide right heel toward buttocks until a gentle stretch is felt, then straighten leg again. Repeat with other leg. Repeat 10 times each leg.



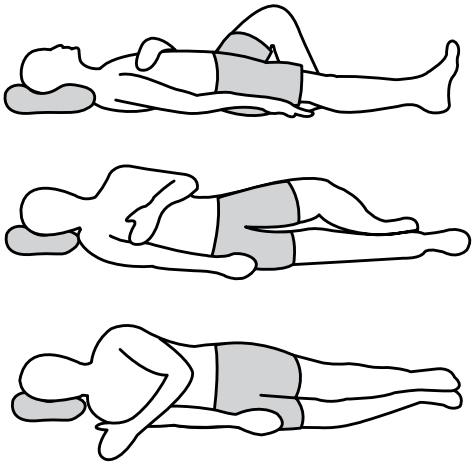
ANKLE /FOOT:
Range of Motion—Plantar/Dorsiflexion

With leg straight, gently flex and extend ankle. Move through full range of motion. Repeat 15 times per set.



You should do two arm exercises and two leg exercises for two minutes every two hours after surgery during your hospital stay.

Getting Out of Bed Post-Operation

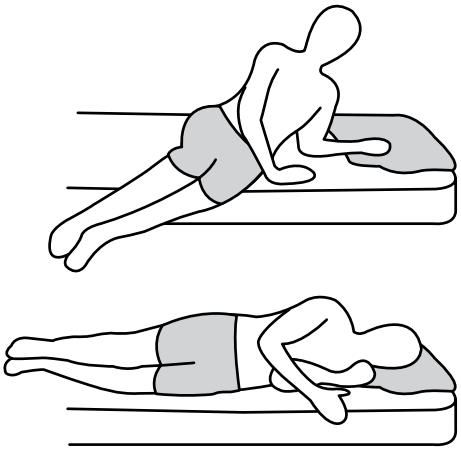


MOVEMENT:
Log Roll

Lying on back, bend left knee and place left arm across chest. Roll all in one movement to the right. Reverse to roll to the left. Always move as one unit.

MOVEMENT:
Get Into/Out of Bed

Lower self to lie down on one side by raising legs and lowering head at same time. Use arms to assist moving without twisting. Bend both knees to roll onto back if desired. To sit up, start from lying on side, and use same movement in reverse. Keep trunk aligned with legs.



Day of Surgery

What Should You Do/Not Do?

TO EASE BREATHING:

- ○ Keep the head of your bed elevated at 30 degrees.
- ○ Use your incentive spirometer (breathing device) while awake.

DO NOT DRINK FLUIDS UNTIL NURSE GIVES THE OK.

- ○ Use the medicine cup at bedside to take 30 cc (1 ounce) of ice chips while awake.
- ○ Record your intake.

DIET INFORMATION

Advance Stage 2 diet: Once cleared by the bariatric team OR instructed by nurse

- ○ Advance as tolerated after four hours of ice chips.

TO PREVENT BLOOD CLOTS:

- ○ Do ankle and arm exercises while awake. (See instruction sheets.)
- ○ When in bed, wear anti-blood clot boots (PAS boots).
- ○ Walk every four hours when you are awake, but can do more often if you choose.
- ○ Record your exercise.

WEAR HEART AND OXYGEN MONITOR AT ALL TIMES.

- ○ This allows staff to detect complications more quickly.
- ○ Oxygen makes breathing easier and improves healing; nurse will let you know when to remove oxygen.

WEAR YOUR CPAP/BIPAP WHEN YOU SLEEP.

Ask any questions you may have about your care at home.

What Will CareGivers Do For Me?

- ○ Regular checks (rounding) hourly by staff to meet your needs and questions.

Potty	Staff will help you to the restroom. Please call; don't fall.
Position	Help you with repositioning in bed and walking.
Possessions	Ensure ice/drinks, call bell and belongings are within reach.
Pain	Pain assessments to help keep you comfortable.

- ○ Start oral pain medication.
- ○ Monitor heart rate, breathing, oxygen levels, blood pressure every four hours. Monitor blood sugar levels every six hours. Monitor surgical incision sites frequently initially then every four hours.
- ○ Apply abdominal binder/or reinforce dressing.
- ○ Home medications restarted according to surgeon's orders.
- ○ Keep you hydrated with IV fluids constantly over the first 24 hours.
- ○ Measure urine output every eight hours.

LET US KNOW

If your pain is more than you are comfortable with or can tolerate or if you feel nauseated, are vomiting or extremely anxious.

Bariatric Nutrition during Hospital Stay

Stage 2

Clear liquids are essential to keep you hydrated during this phase of your diet progression. This stage consists of sugar-free and caffeine-free liquids (gelatin is included) that you can see light through.

- When starting this stage of the diet progression, begin to sip 1 ounce over a 15-minute timeframe.
- Stop drinking if you feel overfull, uncomfortable or nauseous.
- Some patients tolerate different types of clear liquids at various temperatures after surgery, so you may have to try several to see what works for you. (For example, warm vs. cold vs. room temperature)

REMEMBER:

- Sip small amounts slowly.
- No straws.
- When beginning this stage, allow 15 minutes to sip 1 ounce (30 cc medicine cup) for a total of 4 ounces per hour (120 cc or 4 medicine cups per hour). Doing this will help prevent distress to your new pouch, intestinal discomfort, excess gas and bloating.

Once you are able to comfortably drink 1 ounce over 15 minutes, advance as you tolerate to drinking 1–2 ounces of clear liquids over 15 minutes to start working towards your goal of 64–80 ounces of fluid per day.

Day 1 After Surgery

What should you Do/Not Do?

DO

- **Continue previous day program:**
  - Use your incentive spirometer (breathing device) while awake.
  - Do ankle and arm exercises while awake. (See instruction sheets.)
  - When in bed wear anti-blood-clot boots.
  - Walk every four hours when you are awake with assistance or independently if cleared by nursing, noting that is safe for you to do so.
  - Record your exercises.
  - Wear heart and oxygen monitors at all times.
  - Manage your pain; notify nurse if your pain increases or is uncomfortable to tolerate.
  - Wear your CPAP/BiPAP when sleeping.

- **Notify nurse**
  If you have pain, pass gas or if you have any other needs or questions.

- **Shower**
  Staff will assist and protect your surgical site and equipment with clear wrap.

- **Record urine output**

- **Stage 3 diet**:
  - Call Memorial Room Service Dining (83463) to order (refer to bariatric menu to check your options).
  - Walk to the kitchen on the unit and help yourself to approved fluid choices.
  - Record your intake.

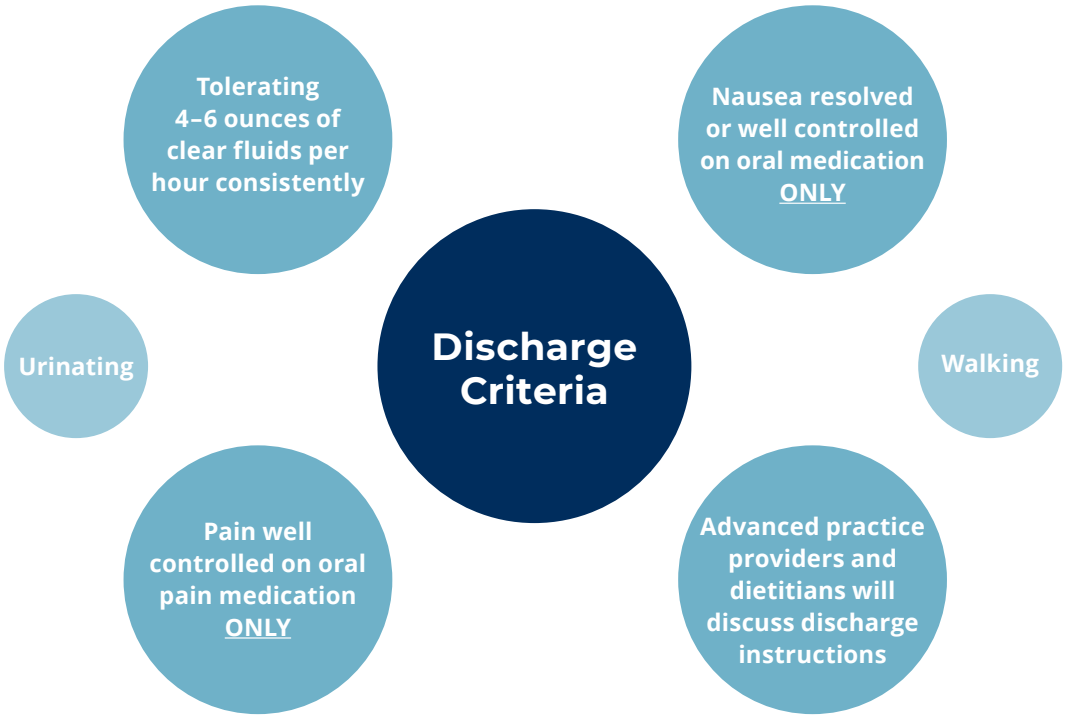
DON'T

- **Use straws.**
- **Drink caffeine, carbonation, soda or fruit juice.**
- **Consume added sugars.**

What Will Caregivers Do For Me?

- Regular checks hourly to ensure your needs are met and questions are answered.
- 4 a.m. blood draw to determine how your body is responding to your surgery.
- Early a.m.: Bariatric teaching rounds (7 a.m.)
- Bariatric team surgeons, advanced practice providers, dietitian, social worker, pharmacist and nursing staff will check on you and conduct teaching.
- Lovenox will be given to prevent blood clots.
- Monitor heart rate, breathing, oxygen levels and blood pressure every four hours.
- Band-Aids removed at surgical sites.
- Monitor intake/output of liquids.
- Oral pain medication will be continued to help with pain.
- Test blood sugars four times every day.

Patient Discharge Criteria



TIPS FOR HEADING HOME

- ○ Wear loose-fitting clothing.
- ○ Time your pain medication so you take a dose just before leaving the hospital.
- ○ Have a pillow in the car so that you can hold it against your abdomen for support.
- ○ Take a bottle of water with you so that you can sip all the way home.
- ○ Do ankle exercise while in the car (if traveling for several hours).

Stage 3 and Discharge Diet

At this stage of the diet progression, if you have not already, begin to try and increase your clear liquids to 1 to 2 ounces every 15 minutes. This rate will provide an average intake of 6 to 8 ounces per hour.

- Once you are able to drink 6 to 8 ounces of clear liquids per hour, start introducing liquid protein.
- Start with 1 to 2 ounces of protein shake, light soy milk, low-fat or fat-free milk or lactose-free milk per hour and the remaining ounces as clear liquid choices. Doing this will help reduce feeling over-full, bloated, nauseous and uncomfortable.
- Once you are able to tolerate 1 to 2 ounces per hour, start to increase slowly the amount you are drinking to reach the protein goal determined with your dietitian.

When you reach your goal protein shake amount, aim to drink them as "meals." For example, if your goal is three protein shakes per day, try to drink them as breakfast, lunch and dinner. This will help you return to structuring your meals.

Time interval:

Discharge through first post-op visit with surgeon

1. Any sugar-free, caffeine-free, carbonation-free, alcohol-free beverage
   - Water
   - Decaf tea or coffee
   - Broth
   - Sugar-free gelatin
   - Sugar-free drink mix
   - Sugar-free popsicles
2. Liquid protein
   - Whey protein isolate protein drinks or whey protein hydrolysate
   - Skim/1% milk
   - Lactose-free milk
   - Light soy milk

Post-op priorities

Order of importance for first 7–10 days post discharge:

1. Clear liquids
2. Liquid protein supplements
3. Post-op vitamin/mineral supplements

If after 10 days you still struggle with these three priorities, please reach out to our office.

IMPORTANT REMINDERS

- Start your vitamins when you return home from the hospital. Take them as recommended by your dietitian.
- If you are not tolerating liquid protein or vitamins, it is OK to reduce the amount or take a break from them. Focus on drinking clear liquids and try to restart protein and vitamins later.
- Journal all your fluids daily.
- Fluid goal is 64–80 ounces daily.
- If you are drinking 40 ounces or less of fluid daily, please call the Memorial Wellness Center or your surgeon's office.
- Dehydration is the number one reason post-bariatric surgery patients are readmitted to the hospital.
- Lactose intolerance can happen after bariatric surgery. If you are drinking low-fat or fat-free regular milk and you develop any gassiness, bloating or diarrhea, try switching to light soy milk or lactose-free milk.

Patient Discharge Instructions

Procedure: Weight-loss surgery

Discharge Date

Discharge To

DIET/NUTRITION

- ○ Continue diet as directed by your dietitian. Do not advance until directed to do so by your surgeon or dietitian.
- ○ Begin vitamin/mineral supplements the first day home from the hospital. Follow regimen given to you by the dietitian.
- ○ Drink at least 64–80 ounces of fluid per day. Aim for one to two cups per hour, using small frequent sips.

ACTIVITY/SHOWER/BATHING/INCISION CARE

- ○ Shower daily and as needed. Please ensure incisions are patted dry.
- ○ Leave steristrips alone. They will fall off or surgeon will remove.
- ○ There are no sutures or staples to be removed for laparoscopic surgery patients.
- ○ You may place ice packs on incisions as needed to help with pain relief during first week following surgery.
- ○ No driving if taking pain medication.
- ○ You must walk at least once every two hours (during waking hours) for the next four weeks.
- ○ For longer car rides, in addition to ankle pumping, get out of the car and walk for five minutes every two hours.
- ○ Expect to be off work 2–4 weeks. If you need a return-to-work note, that can be provided at the one week follow-up visit with your surgeon.
- ○ Your stamina often decreases following surgery. The loss of stamina depends upon your age, general health and the complexity of the operation. It takes time to recover from surgery.

TREATMENTS

- ○ Use incentive spirometry device (10 breaths four times per day) for one week after surgery.
- ○ If diabetic, monitor your blood sugar fasting in the morning and at bedtime or as directed if more frequent monitoring is needed.
  - Call your surgeon if it is greater than 250 or less than 70.
- ○ If you have high blood pressure, monitor your blood pressure at least twice daily. Record in your diary and bring to your surgeon's visit.
  - Call your surgeon if your blood pressure is greater than 150/90 or less than 90/50.

MEDICATION RESOLUTION

- ○ Take medications ordered by your surgeon (refer to list at discharge).
- ○ DO NOT take anti-inflammatory drugs (NSAIDS), such as ibuprofen, Motrin, Advil, Aleve, naproxen, meloxicam, toradol, nabumentone and Pepto-Bismol.
- ○ Your physician will give you a plan for safely restarting aspirin or blood-thinning medication. Examples of these medications include aspirin, coumadin, Eliquis, Pradaxa and Xarelto. Aspirin must be enteric-coated.

CT SCAN/NASOGASTRIC TUBE PRECAUTIONS

- ○ Limit oral contrast to 30–50 cc test
- ○ Nasogastric tube placement only by fluoroscopy

REASONS TO CALL YOUR SURGEON:

- ○ Any questions regarding your recent bariatric surgery
- ○ Severe nausea, vomiting or dry heaves for longer than two hours
- ○ If you vomit blood or have bloody diarrhea
- ○ Severe pain (abdomen, chest, back, shoulder, leg or arm)
- ○ Trouble breathing (if severe, call 911)
- ○ Any abnormal feeling or concern
- ○ Wound infection: Signs and symptoms such as temperature greater than 101°F; reddened or warm-to-the-touch incision; any drainage other than clear; swelling; odor or pain at the site
- ○ Trouble drinking adequate fluid intake (minimum of 40 ounces per day)
- ○ Chest pain or rapid heartbeat (more than 100 beats per minute)
- ○ Leg pain or swelling
- ○ Any pain not relieved by pain medication
- ○ Urine output less than four times in 24 hours
- ○ Any emergency room visit during first 12 months after surgery
- ○ Should it be necessary to go to emergency room in the first year after surgery, make sure the ER staff notifies your bariatric surgeon upon your arrival. Locally, please go to Springfield Memorial Hospital Emergency Department.

IMPORTANT TELEPHONE NUMBERS

Lincoln Memorial Hospital	217–732–2161
Decatur Memorial Hospital	217–876–4249
Memorial Wellness Center	217–788–3948 Toll-free: 866–205–7915
Jacksonville Memorial Hospital	217–245–9541
SIU School of Medicine	217–545–8000
Springfield Clinic surgeon's office	217–528–7541 x 24200 Toll-free: 800–444–7541

EMERGENCY CONTACT

Springfield Memorial Hospital	217–788–3000
SIU School of Medicine	217–545–8000
Springfield Clinic TeleNurse	217–528–7541 Toll-free: 800–444 7541

Follow-up visits

AFTER DISCHARGE	TASK	DATE	TIME	INSTRUCTIONS
24 Hours	Phone call from surgeon's office nurse			
1 Week	Bari 500 Class *This visit will be scheduled upon discharge from the hospital.*			
1 Month	• Surgeon Visit • Nutrition Visit • Physical Therapy Visit • Psychosocial Visit • Labs			• Call surgeon's office if you need lab orders. • Bring food logs to nutrition visit.
3 Months	• Advanced Practice Provider Visit *(91 days after surgery)* • Nutrition Visit • Physical Therapy Visit • Psychosocial Visit			• Bring food logs to nutrition visit.
6 Months	• Advanced Practice Provider Visit • Nutrition Visit • Physical Therapy Visit • Psychosocial Visit • Labs			• Complete labs at least two weeks prior to your visits to ensure they will be resulted by the time of your visits. • Call MWC if you need lab orders. • Bring food logs to nutrition visit.
12 Months	• Advanced Practice Provider Visit • Nutrition Visit • Physical Therapy Visit • Psychosocial Visit • Labs			• Complete labs at least two weeks prior to your visits to ensure they will be resulted by the time of your visits. • Call MWC if you need lab orders. • Bring food logs to nutrition visit.
18 Months	• Advanced Practice Provider Visit • Nutrition Visit • Psychosocial Visit			
Bari Annual Visit	• Advanced Practice Provider Visit • Nutrition Visit • Psychosocial and Physical Therapy as needed. • Labs			• Complete labs at least two weeks prior to your visits to ensure they will be resulted by the time of your visits. • Call MWC if you need lab orders. • Bring food logs to nutrition visit.

Normal Postsurgical Symptoms

SWELLING AND BRUISING

- Moderate swelling and bruising is normal after any surgery.
- Severe swelling and bruising may indicate bleeding or possible infection. Notify your surgeon if this occurs.

DISCOMFORT AND PAIN

- Mild to moderate discomfort or pain is normal after any surgery.
- If the pain becomes severe and is not relieved by pain medication, please contact your surgeon.

NUMBNESS

- Small sensory nerves to the skin surface are occasionally cut when the incisions are made or interrupted by undermining of the skin during surgery. The sensation in those areas gradually returns, usually within two to three months, as the nerve endings heal spontaneously.
- Because of some postoperative numbness, avoid heating pads until you heal.

ITCHING

- Itching and occasional small shooting electrical sensations within the skin frequently occur as the nerve endings heal. These symptoms are common during the recovery period. Ice, skin moisturizers, vitamin E oil and massage are often helpful.

REDNESS OF SCARS

- All new scars are red, dark pink or purple and take about a year to fade.
- We recommend you protect your scars from the sun for a year after surgery. Even through a bathing suit, sunlight can reach the skin and cause damage. Wear a sunscreen with an SPF of at least 15 when out in sunny weather.

Common Complaints After Bariatric Surgery

NAUSEA

Nausea can be related to poor chewing of food, overeating, under-eating, increased sensitivity to odors or tastes, pain medication, post-nasal drip or dehydration. Medications called anti-emetics are sometimes given to alleviate nausea. In rare cases, nausea can lead to repeated vomiting. Dehydration can result. If dehydration is severe, the patient may be readmitted to the hospital.

Call the surgeon's office if nausea lasts more than 12 hours and/or there is persistent vomiting.

- Odors can sometimes lead to nausea after surgery. Post-op patients report that putting a few drops of peppermint essential oil, available at many health food stores, on a handkerchief can be very helpful if you are bothered by odors after surgery. Avoid perfumes and scented lotions. If food odors bother you, try to have someone else prepare your meals or prepare bland foods. Other patients have found relief by sucking on a cinnamon stick.
- If nausea is interfering with your drinking of fluids, you may want to try ginger, peppermint tea, fennel tea, decaffeinated green tea or water with lemon (hot or cold).
- If you develop nausea shortly after taking a dose of pain medication, call the surgeon's office to discuss whether you should have a change in your pain medication.
- Stay hydrated—fluids should be continuously sipped all day long to prevent dehydration. You need a minimum of 64–80 ounces of fluids per day. Increase this amount in hot weather.

VOMITING

Postoperative vomiting is usually due to poor eating technique and/or eating too much. It can take several weeks to adjust to your new pouch and to new eating habits. In the beginning, it can be difficult to gauge how much food will fill your pouch. (Fullness is experienced as a pain or pressure behind your breastbone.) Chew your food to the consistency of baby food. Use a baby fork or toothpick to eat, as this will help you slow down. Measure your food carefully before meals as this will help you avoid overeating.

REMEMBER, VOMITING IS USUALLY CAUSED BY:

- Eating too fast
- Not chewing food properly
- Eating food that is too dry
- Eating too much food at once
- Eating solid foods too soon after surgery
- Drinking liquids either with meals or right after meals
- Drinking with a straw
- Lying down after a meal

If vomiting occurs in the first few weeks after surgery, stop eating solid foods and sip clear liquids (water, sugar-free drink mixes, broth, decaffeinated tea, etc.) for 24 hours before resuming solid foods.

If vomiting continues for more than 24 hours, contact your surgeon's office.

DEHYDRATION

Dehydration will occur if you do not drink enough fluids. This is particularly important in the first and second weeks after surgery. Symptoms include fatigue, dark-colored urine, dizziness, fainting, nausea, low back pain (a constant dull ache across the back) and a whitish coating on the tongue.

- Dehydration may lead to other complications. Contact your surgeon if you believe you may be dehydrated. In some cases, you will require admittance to the hospital so fluids can be administered. You may need to go to the infusion unit for outpatient intravenous fluid.
- If you have difficulty drinking fluids due to nausea, suck on ice chips.

Mild to moderate dehydration is likely to cause:

- Dry, sticky mouth
- Sleepiness or tiredness
- Thirst
- Decreased urine output
- Few or no tears when crying
- Muscle weakness
- Headache
- Dizziness or light-headedness

Severe dehydration, a medical emergency, can cause:

- Extreme thirst
- Irritability and confusion
- Very dry mouth, skin and mucous membranes
- Lack of sweating
- Little or no urination—any urine produced will be dark yellow or amber
- Sunken eyes
- Shriveled and dry skin that lacks elasticity and doesn't "bounce back" when pinched into a fold
- Low blood pressure
- Rapid heartbeat
- Fever
- In the most serious cases, delirium or unconsciousness

BOWEL HABITS

- After the duodenal switch, there may be an increase in number of bowel movements per day. On average, patients will have 2–3 bowel movements per day after the duodenal switch.
- Diarrhea can also be experienced if high amounts of fats are consumed. These symptoms are typically controlled with proper changes in the diet and the inclusion of yogurt and probiotics. When necessary, some patients are prescribed antibiotics like Flagyl. The antibiotic should be used in conjunction with dietary changes.

FLATULENCE

- Excessive and foul-smelling gas after duodenal switch is primarily related to dietary intake but can be common after surgery.
- Carbohydrates, artificial sweeteners, fiber, high-fat intake and carbonated drinks all cause or increase excessive flatulence.

Commonly Reported Psychosocial Concerns After Bariatric Surgery

	WEEKS	MONTHS			
	1–4	1–3	3–6	6–12	12 +
Pain from surgery	✓				
Regret—"Why did I do this to myself?"	✓	✓			
Fatigue	✓	✓			
Medication malabsorption—symptoms of depression or anxiety return, discontinuation symptoms (see handout on Discontinuation Syndrome)	✓	✓			
Boredom with bariatric diet—not much variety in the pre-op diet and first month post-op	✓	✓			
Time management—difficulty prioritizing vitamins, fluids, meals, appointments when returning to work	✓	✓			
Food grief/loss—experiencing a sense of loss or sadness about food you are no longer able to eat or cannot eat at this time, not being able to turn to food for comfort	✓	✓	✓		
A feeling of disappointment when "everything will be okay after surgery" doesn't happen	✓	✓	✓		
Too much exercise and not enough calorie intake	✓	✓	✓		
Social gatherings with food—ambivalence or resistance from others to adjust to your new dietary needs	✓	✓	✓	✓	✓
Increased attention from others—others making comments about your weight loss, asking about your weight loss, asking about surgery, others making insensitive remarks	✓	✓	✓	✓	✓
Depression—sadness, tearfulness, worthlessness, hopelessness, loss of motivation, loss of pleasure, irritability	✓	✓	✓	✓	✓
Anxiety—jitteriness, irritability, agitation, worry, obsessive thoughts, difficulty sleeping, "pit" in your stomach	✓	✓	✓	✓	✓
Distorted self-image—not seeing weight loss when looking in the mirror or not "feeling" like you are losing weight		✓	✓	✓	✓
"Testing the waters" with alcohol, caffeine, unhealthy food choices			✓	✓	✓

Timeline for Food Reintroduction After Discharge

Seven to 10 days post-op

Stage 4: Soft, high-protein foods

Moist, minced, ground or pureed meats

Six weeks post-op

Well-cooked, soft fruits and vegetables

More solid meats

REMINDER:
Introduce one new food at a time

Stage 4: Soft high-protein foods

Time interval: After first post-op visit with the surgeon/Bari500

Typically 10 days post-op through six weeks post-op or as otherwise directed.

During this time, a high-protein diet is emphasized, especially in the first few weeks and months after surgery. The amount you will be able to tolerate at one sitting will depend on the size of your sleeve at the time of the duodenal switch procedure. If the procedure is done as a staged procedure (sleeve gastrectomy prior to the duodenal switch or DS), you will be able to tolerate more volume after the DS.

- ○ The amount of protein you need depends on your lean body mass. Refer to your personalized nutrition prescription form to see your protein goal (grams per day).
- ○ Protein intake aids in wound healing; essential for maintaining muscle during weight loss
- ○ Meal timeframe: 20 to 30 minutes
- ○ Food volume will vary.
  - ¼ to 1/3 cup (single stage DS)
  - 1 to 1 ½ cup (two stage DS)
- ○ Take small bites, the size of a pencil eraser.
- ○ Do not drink fluids with your meals.
- ○ Stop drinking 15 minutes before a meal.
- ○ Wait 30 minutes after a meal before drinking.
- ○ Drink protein shakes between your meals as your "scheduled snacks" to assist you in meeting your calorie and protein needs.
- ○ No fruit or seeds

SOURCES OF PROTEIN

High-protein choices:

- ○ Egg or egg substitute
- ○ Minced/chopped skinless chicken or fish
- ○ Tuna fish (water-packed only)
- ○ Tofu
- ○ Cottage cheese (low-fat/fat-free)
- ○ Light yogurt (blended), Greek yogurt or Kefir
- ○ Cheese (low-fat/fat-free)
- ○ Cooked beans, bean soups (black, cannellini, fava, garbonzo, lima, navy, pinto, red, chickpeas, lentils)

Low-protein choices for variety:

- ○ Hot cereal, such as oatmeal or Cream of Wheat
- ○ Canned/jarred peaches or pears in their own juice (not syrup)
- ○ Mashed ripe banana
- ○ Unsweetened applesauce (Splenda-sweetened is acceptable)
- ○ Sugar-free, fat-free pudding
- ○ Thin slice of whole grain toast with crust removed (i.e., Healthy Life bread toasted, sandwich thin, whole grain tortilla toasted)
- ○ Crackers

Breakfast Ideas

High-protein oatmeal or Cream of Wheat

Make cup of oatmeal (according to the directions on the package), mix in 1 to 2 tablespoons of vanilla or unflavored protein powder.

Note: you can add sugar-free coffee syrups, PB2 (powdered peanut butter) or Splenda and cinnamon to flavor the oatmeal.

Cream of Wheat –
Protein: 10 grams | Calories: 70

Eggtastic eggs

Scramble an egg or cup of Egg Beaters. Add one wedge of flavored Laughing Cow cheese to add additional moisture.

Note: try scrambling eggs in microwave for softer, more moist scrambled eggs.

With whole egg –
Protein: 9 grams | Calories: 135

With Egg Beaters –
Protein: 7 grams | Calories: 65

Greek yogurt cream cheese

Line a colander with a dish towel and place it over a bowl. Spoon Greek yogurt into the towel and fold the towel over the top. Let drain overnight. In the morning, it will be cream cheese that can be flavored with Stevia, fruit, chives or spices.

Eggtastic omelet

Make an omelet with one egg and 1 tablespoon of 2 percent reduced-fat cheese of your choice.

With whole egg –
Protein: 11 grams | Calories: 125

With Egg Beaters –
Protein: 9 grams | Calories: 65

Cottage cheese and fruit

Mix 2 tablespoons of sugar-free applesauce with 3 tablespoons of cottage cheese.

Protein: 6 grams | Calories: 60

Lunch and Dinner Ideas

Crackers and cheese

One slice of 2 percent cheese and four Wheat Thins.

Note: try different flavors and varieties of cheese and Wheat Thins to add variety.

Protein: 4 grams | Calories: 95

High-protein tuna/chicken salad

Combine 2 or 3 tablespoons of low-fat Greek yogurt, one can of tuna or chicken and onion powder, garlic powder, salt and pepper to taste.

Protein: 15 grams; calories: 115 per ¼ cup serving

High-protein egg salad

Combine four large hard-boiled eggs (cooled and shelled), 1/8 cup mayonnaise, a cup of fat-free plain yogurt and salt and pepper to taste. Note: you can add pickle juice or other spices to season. Remember to chop eggs into tiny pieces to avoid frothing.

Protein: 8 grams | Calories: 130
per ¼ cup serving

Tiny tuna melt

Toast one piece of Healthy Life bread. Trim crust off and cut bread into four pieces. Make high-protein tuna salad. Place 1 to 2 tablespoons of tuna salad on piece of toast, top with slice of 2 percent cheese and top with another piece of toast.

Hummus Among Us

Place two 15.5 ounce cans of garbanzo beans, rinsed and drained, and two crushed garlic cloves in a food processor. Pulse five times or until chopped. Add cup of water, ¼ tahiti, 3 tablespoons of fresh lemon juice, 2 tablespoons of extra virgin olive oil, 3/4 teaspoons of salt and 1 teaspoon of black pepper. Pulse until smooth, scraping down the sides as needed. Refrigerate for at least one day after preparing. Let stand at room temperature for 30 minutes prior to serving.

Protein: 1.5 grams | Calories: 44
per 2 tablespoon serving

For an added protein punch, add 1 tablespoon of Greek yogurt to 2 tablespoons of hummus for an added creamy texture and 3 grams of protein. Or add 1 tablespoon of non-flavored or chicken-soup-flavored protein powder to add an additional 6 grams of protein.

			CALORIES	PROTEIN
DAY 1	Breakfast	¼ cup high-protein oatmeal	70	10
	Snack	1 protein shake with 8 oz milk*	200	30
	Lunch	3 tbsp cottage cheese with 4 Wheat Thins	65	6
	Snack	1 protein shake with 12 oz milk*	245	34
	Dinner	¼ cup high-protein egg salad ¼ piece of whole grain toast	140	8
	Snack	1 cup milk*	90	8
	TOTAL		**810**	**92**
DAY 2	Breakfast	1 egg omelet with 1 tbsp cheese	125	11
	Snack	1 protein shake with 8 oz milk*	200	30
	Lunch	Tiny tuna melt	110	11
	Snack	1 protein shake with 8 oz milk*	200	30
	Dinner	3 tbsp high-protein hummus with 4 melba crackers	90	7
	Snack	1 sugar-free hot chocolate made with 6 oz milk*	90	8
	TOTAL		**815**	**97**
DAY 3	Breakfast	Light and Fit Greek yogurt	80	12
	Snack	1 protein shake with 12 oz milk*	245	34
	Lunch	1 2% cheese stick and 4 whole grain crackers	105	6
	Snack	1 protein shake with 12 oz milk*	245	34
	Dinner	¼ cup bean soup with 1 tbsp unflavored protein added	100	9
	Snack	2 tbsp no-added-sugar applesauce	30	0
	TOTAL		**805**	**95**

*Skim milk or fat-free/low-fat lactose-free milk

Six Weeks Post-Op:
Cooked Vegetables and Fruits; More Solid Meals

- Reintroduce soft, well-cooked vegetables into your diet and soft and/or well-peeled fruits.
- Try one new vegetable/fruit per day to assist in identification of food intolerance.
- Begin with 1 tablespoon and gradually increase to 2 tablespoons at one or two meals per day.

Good choices to start:

- Steamed carrots
- Steamed green beans
- Cooked peas
- Soft, ripe bananas
- Canned peaches (packed in own juice; rinsed and drained)
- Canned pears (packed in own juice; rinsed and drained)
- Low-sodium tomato sauce
- Cooked sweet potato (without skin)
- Canned mandarin oranges (drained)
- Salsa

Tips:

- Start with above vegetables and fruits to establish tolerance. Once tolerance is established, try more cooked cruciferous vegetables (like broccoli and cauliflower).
- Always consume protein foods first.
- Avoid trying a new fruit and new vegetable at the same meal.
- Be creative. Add seasoning such as Mrs. Dash, ButterBuds, onion and garlic powder or fresh or dried herbs to add flavor.
- If gas occurs with cruciferous vegetables, you can try Beano to assist in tolerance.

Solid Meats

- Reintroduce more solid meats and/or more textured proteins into your diet. Begin with 1 to 2 tablespoons.
- Avoid dry meats/protein sources.
- Try only one new type of meat/textured protein source per day.
- Do not introduce any new vegetables/fruits in the same meal you are trying a new meat/textured protein source.
- Use moist cooking methods such as baking, poaching, stewing, steaming or slow cooking. Avoid grilling, pan sautéing or other dry cooking methods.
- Small bites (approximately the size of a pencil eraser) are key.
- Chew food 20 to 30 times, to an applesauce consistency, before swallowing.

Good choices to start:

- Ground turkey moistened with tomato sauce (90 percent or leaner; without skin)
- Ground chicken moistened with tomato sauce (without skin)
- Baked fish (such as salmon, tuna, tilapia or cod)
- Lean deli meats (such as deli turkey or chicken)
- Lean or extra-lean ground beef, venison or bison with tomato sauce (90 percent or leaner)
- Textured soy proteins (such as Boca crumbles or soy sausage)

Meat preparation tips:

- Pound thick cuts to ½ inch thick.
- Use meat tenderizer when preparing lean animal proteins to assist with tolerance.
- Cook meats/textured proteins in low-fat creamed soups, tomato sauces or broths.
- Do not overcook meat/textured protein sources.
- Tent baking pan with foil to maintain moisture.

Post-Op Sample Meals

Breakfast

- 2 tablespoons scrambled Egg Beaters or egg
- 1 tablespoon grated reduced-fat cheese
- 1 tablespoon mild salsa

Lunch

- 3 tablespoons low-fat cottage cheese
- 1 tablespoon canned green beans

Dinner

- 2 ounces of chicken cooked with salsa and low-sodium taco seasoning
- 1 tablespoon cooked carrots with Splenda and cinnamon
- 1 tablespoon canned peaches

Between meals

- 80 ounces of fluids (spaced 15 minutes before and 30 minutes after eating)
- Clear liquids
- Protein shakes to meet your protein goal, as advised by the dietitian

Eight Weeks Post-Op: Healthy fats

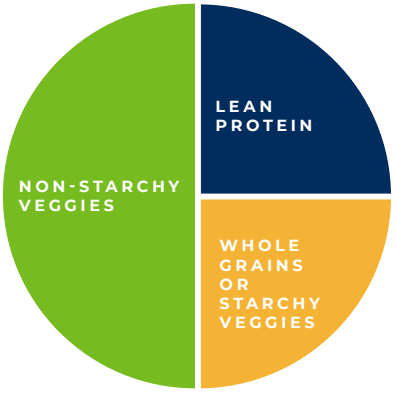
- Dietary fat may lead to loose, oily stools after surgery. The amout you will be able to tolerate will vary.
- May better tolerate if servings are spaced throughout the day.
- At this point, you may begin to reintroduce healthy fats into your diet.
- Aim for a total of less than 35 grams of fat/day.
- Choose mono- and polyunsaturated fats and avoid saturated and/or trans fats.
- Start with 1 to 2 teaspoons per day.

Good choices:

- Peanut butter and/or nut butters (smooth)
- Avocado
- Olive oil
- Canola oil
- Peanut oil
- Flax seed oil
- Olive oil based salad dressings

Twelve Weeks and Beyond

Introduce higher fiber foods and bariatric general diet (Stage 5)



- Fiber is an essential part of a healthful diet and weight maintenance.
- Fiber slows digestion and is more work for the gut. Therefore, high-fiber foods can be more difficult to tolerate in the early postoperative period.
- At this point, you can begin incorporating more high-fiber foods back into your diet. Use the "Plate Model" as your guide for balance, just as you did pre-operatively. Only now, the plate is on a smaller scale.

Good choices:

- Whole grains: Low-sugar cold cereals, whole-wheat pasta (such as Smart Taste), whole-grain flat bread (such as Flatouts), whole-grain crackers
- Beans
- Legumes
- Nuts, seeds
- Lentils
- Raw fruits: Peels and/or seeds removed if needed
- Chia seeds, flax seeds
- Raw vegetables: Peels removed if needed; introduce cruciferous vegetables (such as cabbage, cauliflower, broccoli) last

Be aware of common problem foods/textures:

- Dry meats
- Greasy or fried foods
- Hard-boiled eggs
- Rice
- Fibrous vegetables
- Celery
- Asparagus
- Nuts
- Coconut
- Seeds and skins of fruits or vegetables
- Membranes from citrus fruits
- Corn
- Dried fruit
- Untoasted bread or doughy bread
- Concentrated sweets

Lactose intolerance

Some people may not tolerate milk; you may stop if it does not agree with you. Lactose intolerance is not uncommon after gastric bypass surgery. Symptoms include cramping, diarrhea and bloating.

Solutions:

- Lactose-free milk (i.e., fat-free Lactaid milk)
- Low-fat, low-sugar soy milk (i.e., Light Silk soy milk)
- Low-sugar almond milk (i.e., Unsweetened Almond Breeze)
- Take lactase enzyme (chewable tablet) before drinking skim cow's milk.

Don't forget:

- Maintain your meal structure. Don't skip meals.
- Eat protein foods first.
- Eat slowly and take small bites.
- Use a teaspoon, toothpick or baby fork to assist in small bites.
- Chew food (approximately 20 to 30 times) until it is of pureed consistency.
- Stop eating or drinking with the first sensation of satiety.
- Protein supplements will be used initially as your scheduled snacks.
- Take your vitamin or mineral supplements as directed by your surgeon or dietitian.
- Do not drink fluids with meals. Wait 15 minutes before and 30 minutes after eating to drink.
- Drink acceptable/hydrating fluids between meals. Aim for 1 to 2 cups per hour.
- Make each bite count. Fill your pouch with quality foods high in nutrients (such as turkey bacon instead of high-fat pork bacon) or lower-fat protein food sources.
- Log your intake, now and always!

Troubleshooting

If nausea or vomiting occurs, particularly after a food is reintroduced, go back one step on your diet for the next 24 hours.

PAY ATTENTION TO:

- Fluid needs—"Am I meeting my fluid goal?"
- Eating slowly—"Did I eat too quickly?"
- Chewing foods thoroughly—"Was my food chewed down to applesauce consistency before I swallowed?"

If nausea or vomiting persists, call your surgeon.

Success After Surgery

Losing and maintaining weight can be challenging. Research has shown us certain principles can help you be successful. Colleen Cook describes these in more detail in her book “The Success Habits of Weight-Loss Surgery Patients.” Here are some of those principles so you can continue to monitor your progress.

Nutrition

- ○ Schedule meals and snacks.
- ○ Eat nutrient-dense foods. Make every bite count! Foods that are nutrient-dense include lean meats, poultry and fish; low-fat dairy products; fruits and vegetables; and high-fiber breads and cereals. Read Nutrition Facts panels to find foods that will give you more bang for your buck nutritionally.
- ○ Ensure adequate protein intake. Adequate protein intake is critical for weight-loss surgery patients. The high-protein portion of the meal should be eaten first before moving on to any other kinds of food.
- ○ Eat breakfast. This will help you to choose lower-calorie foods throughout the rest of the day.
- ○ Avoid carbonation/caffeine/alcohol/high-sugar beverages.
- ○ Make adequate fluid intake a priority! Water helps maintain proper muscle tone, prevents dehydration, improves skin and hair and removes excess toxins from the body. It increases our energy level, suppresses our appetite and helps to maintain our body weight.

Personal accountability

- ○ Weigh yourself. Weighing yourself once a week is ideal: more often becomes a little obsessive; less often makes it too easy to slip!
- ○ Keep a food diary. The best way to know how much you are consuming is to log your food. If you are not able to do this every day, then try to log at least three to four times a week.

Physical activity

Physical activity is a critical component in the ability to maintain significant weight loss. Research demonstrates consistent correlations between physical activity, self-monitoring behaviors and maintenance of weight loss. People who exercise, weigh themselves regularly and keep track of what they eat tend to maintain their weight loss.

Portion control

- ○ Know how big (or small) your new stomach is and how much food it can hold. Measure and weigh your foods to ensure you meet your nutrition goals and don’t over-fill your stomach. Because the duodenal switch is a predominantly malabsorptive procedure, it is important to eat enough nutrient-dense foods to prevent malnutrition.
- ○ Eat slowly enough to recognize the feeling of fullness, and stop eating when full. Try to make each meal last 20 minutes. Put your fork down between bites, and chew your foods thoroughly.
- ○ Aim for satiety. Satiety is the feeling of being full and satisfied after eating.

Vitamin and mineral supplements

Weight-loss surgery success is not only measured by weight and body composition changes but also by good nutritional health. Commit to making your post-op vitamin and mineral supplementation a top priority. Post-op supplementation ensures all of your vitamin/mineral needs will be met after surgery and aids in supporting an efficient metabolism.

Challenges After Surgery

In this section, we are going to address some challenges that you might have faced or are currently facing and how to address them so you can be healthy—both mentally and physically.

While most patients report positive changes in their lives after having bariatric surgery, there are also some negative experiences that may occur with dramatic weight loss. Some of the most commonly reported challenges are:

Loose skin.

With weight gain, the skin stretches to accommodate underlying excess muscle and fat. After weight loss, skin tries to recoil or bounce back. The amount of skin bounce-back essentially determines how much loose skin you will have. There are multiple factors that determine if your skin will be able to tighten up, including the age and elasticity of the skin. The age of the skin is complicated by increased risk factors such as smoking, sun damage, malnutrition, poor vitamin intake and genetics. Some patients choose to have reconstructive surgery while others do not.

Still feeling "big."

Even after losing a significant amount of weight, some patients feel the same size as before. This can be for several reasons, including losing weight so rapidly that your mind hasn't been able to catch up with your body. If you struggled with weight your entire life, it might take a little longer for you to accept the thinner you. Give yourself some time. If you notice these thoughts are impacting your decisions to eat, exercise or socialize with others, please contact us immediately.

Change in relationships.

Dramatic weight loss is not only going to affect you, it will also impact the relationships you have with others. Spouses, children, parents, friends, siblings and co-workers—even the relationship you have with yourself. This change does not have to be negative; however, preparing for it is important. Make sure you are communicating your needs and feelings with others if you start to notice changes.

Switch addiction.

For some, food was calming. It was used to celebrate and commiserate. After bariatric surgery, you may still want to do these things, so how are you going to handle it? Make sure you have healthy ways to cope with your emotions. If you feel there is a behavior that has started taking control of you, please contact our office immediately.

Possible Long-Term Complications

Absence of menstrual periods

Irregular periods are very common in women experiencing rapid weight loss. Less frequent and lighter periods are most common, but in some it is also common to have a heavy period. You may need extra iron supplementation to accommodate for the blood lost.

Bowel obstruction

This complication involves a blockage caused by postoperative swelling, adhesions (scar tissue) or twisting of the intestine. This can occur after any abdominal surgery. This condition requires emergency surgery. Signs of a bowel obstruction may include dehydration, vomiting, abdominal pain, fever and absence of bowel movement; however, in the case of a partial bowel obstruction, diarrhea may result.

Gallstones

The development of gallstones is related to the rapid and significant amount of weight loss and therefore is highest in the first six months after surgery. Gallstones are not a complication of surgery, but rather a complication of rapid weight loss. Obese persons have a very high rate of gallstone formation compared to normal-weight persons. By age 50, nearly 50 percent of morbidly obese women have developed gallstones.

High-risk pregnancy

Women of childbearing age should have a birth control plan in place before surgery. Your focus needs to be on healthy weight loss, and pregnancy will certainly complicate your weight-loss results. Pregnancy after bariatric surgery, especially duodenal switch, is high-risk. You will be at greater risk of nutritional problems during pregnancy.

Oral contraceptives are NOT recommended in women who have had the duodenal switch due to decreased absorption by the intestine. Women should have a thorough discussion with their physician about which birth control method is best for them.

If you become concerned that you are pregnant, it is imperative you receive a urine pregnancy test as soon as possible. If you do become pregnant, you must call your surgeon's office right away. We will refer you to the program dietitian and also collaborate with your family practice physician or OB/GYN to ensure proper prenatal care.

Peptic ulcer

Any type of stomach surgery leaves one more susceptible to the development of an acid-peptic ulcer. Tobacco smoking, aspirin and non-steroidal anti-inflammatory drugs (NSAIDS) and alcohol increase the risk of a peptic ulcer. All bariatric patients are instructed to avoid aspirin, NSAIDS (ibuprophen, Advil, Motrin, naproxen sodium, Aleve) for life after surgery. Former smokers must not resume smoking after surgery as their risks increase dramatically.

Protein and/or protein-calorie malnutrition

Due to the nature of the malabsorption following the duodenal switch procedure, adequate protein and calorie intake to prevent malnutrition should be emphasized. Excessive weight loss, muscle wasting and/or inability to maintain a healthy weight may result from prolonged inadequate intake or absorption of calories and protein.

Stenosis/outlet obstruction

Postoperative swelling or chunks of food can lead to a blockage of the opening between stomach and intestine. Symptoms may include pain and vomiting of undigested food. If untreated, nutritional problems can result. Diagnosis is usually done with endoscopy. Treatment may be done with an endoscopic procedure.

Transient hair loss/skin changes

Hair loss is expected after rapid weight loss and is temporary. Your body is going through tremendous change and hair loss or hair thinning is a frequent effect of the stress that occurs with the body. For some, skin texture and appearance may change. It is not uncommon for patients to develop acne or dry skin after surgery. Minimize changes to your hair and skin by taking your multivitamins daily and making sure you consume the recommended amount of protein per day.

Vitamin and mineral deficiency

Follow-up monitoring by your surgeon, physician and dietitian is critical to prevent and treat vitamin and mineral deficiencies. These can be very subtle at first.

Most patients experience some form of vitamin and/or mineral deficiency after the duodenal switch. These sorts of deficiencies may not emerge or may not become symptomatic until months or even years after surgery. Complications from vitamin and mineral deficiencies can be irreversible, serious and impact your quality of life. For that reason, lifelong nutrition monitoring and lifelong vitamin and mineral supplementing is critical.

NOTES

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