Metabolic and Bariatric Surgery Owner´s Manual

Metabolic and Bariatric Surgery of Evangelical

TABLE OF CONTENTS

INTRODUCTION

Dear Patient,
Welcome to your weight loss surgery journey! This weight loss surgery owner's manual has been developed to help familiarize you to our program and process so that you can be as knowledgeable as possible on the "why," "how," and "what" of metabolic and bariatric (weight loss) surgery and know what to expect as you travel along the journey. The more educated and motivated you are in the process, the better your ultimate outcome. We want to partner with you to help you reach your health goals.

The Metabolic and Bariatric Center of Evangelical is a multi-disciplinary, comprehensive program that addresses obesity and its associated conditions in a holistic manner. Together, Jon Gabrielsen, MD and Christopher Motto, MD have over 30 years of experience in weight loss surgery and extensive experience with clinically supported weight loss operations. Evangelical Community Hospital is an excellent 131 bed Hospital providing an outstanding, personalized patient experience. We hope that because of this you feel connected and supported, that you are a name and not a number.

We are excited to work with you as you walk this road and we eagerly desire that you see the improvements in your health and quality of life that you seek. Always remember, surgery is ONLY a tool. Surgery alone, without discipline and dedication on your part over the course of your life, will not get you where you want to be. We want you to experience success over the long haul and our team will partner with you to make that happen. Thank you for choosing the Metabolic and Bariatric Center of Evangelical! Welcome aboard!

Sincerely,

Jon Gabrielsen, MD, FASMBS
Christopher Motto, MD, FACS

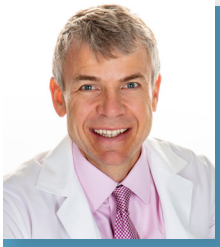
METABOLIC AND BARIATRIC SURGERY PROGRAM OVERVIEW

We understand that for most people weight loss is not just about seeing a certain number on the scale; rather, it is about getting your life back, getting rid of or controlling medical conditions associated with increased weight and being able to do things you haven´t been able to do in years. The cycle of discouragement from years of trying to lose weight can be absolutely punishing. Our multi-disciplinary program will help analyze dietary and lifestyle habits that have been sabotaging your success and help you build new habits that will maximize your chance for a successful long-term outcome. We will determine which operation is the best tool to help you on your journey based on a strong understanding of the short and long-term risks and benefits.

Acronym Reference

Acronym	Description
ASMBS	American Society for Metabolic and Bariatric Surgery
BMI	Body Mass Index
BPD-DS	Bilio-Pancreatic Diversion with Duodenal Switch
CPAP	Continuous Positive Airway Pressure
EBWL	Excess Body Weight Loss
GERD	Gastroesophageal Reflux Disease
LSG	Laparoscopic Sleeve Gastrectomy
NAFLD	Non-Alcoholic Fatter Liver Disease
OSA	Obstructive Sleep Apnea
RYGB	Roux-en Y Gastric Bypass
SADI-S	Single Anastomosis Duodeno-Ileostony with Duodenal Switch
TBWL	Total Body Weight Loss

MEET OUR TEAM



Jon Gabrielsen, MD, FASMBS

Director of Metabolic and Bariatric Surgery

Dr. Gabrielsen graduated from the Indiana University School of Medicine and completed his general surgery residency at Iowa Methodist Medical Center. He is board certified by the American Board of Surgery and is a fellow in the American Society for Metabolic and Bariatric Surgery. Dr. Gabrielsen is fellowship trained in Bariatric and Foregut Surgery and has been providing care for bariatric patients since 2007. He has extensive experience with all major types of metabolic and bariatric surgery including laparoscopic sleeve gastrectomy, laparoscopic Roux-En Y gastric bypass, bilio-pancreatic diversion with duodenal switch, revisional bariatric surgery, as well as endoscopic bariatric procedures. Additionally, Dr. Gabrielsen brings advanced endoscopic skills to Evangelical Community Hospital, having extensively collaborated with his advanced GI colleagues over the course of his career. He is a member of Surgical Specialists of Evangelical with a focus on bariatric and foregut surgery. Dr. Gabrielsen is married with five children and enjoys spending time with his wife and children, camping, mountain biking, running, and skiing.

Christopher Motto, MD, FACS

Metabolic and Bariatric Surgeon

Dr. Motto graduated from Hahnemann University School of Medicine and completed his surgical residency at Geisinger Medical Center. He is board certified by the American Board of Surgery and a fellow of the American College of Surgeons. He specializes in general and bariatric surgery as a partner at Surgical Specialists of Evangelical. He has been performing bariatric surgery for over two decades and started the Metabolic and Bariatric Center of Evangelical. Dr. Motto lives locally with his wife, two children, and dog. When not working he enjoys outdoor activities such as hunting, fishing, and cycling.

Carol Kerstetter, RN

Metabolic and Bariatric Surgery Coordinator

Carol was born and raised in southern Northumberland County. She earned her undergraduate from Geisinger Medical Center School of Nursing and has over 31 years of experience as a registered nurse. She is dedicated to coordinating with each individual patient and the bariatric team to develop a personal plan that will meet the needs of every patient. When she is not working, she enjoys time with her family, outdoor activities, travel, and photography.

Kimberly Criswell, RDN, LDN, CDCES

Dietitian/Nutritionist

Kimberly was raised in Centre Hall, Pennsylvania. She completed a nutrition degree at Pennsylvania State University, followed by post-graduate training in Pittsburgh, Pennsylvania. She has been enjoying partnering with patients to meet their nutrition goals at Evangelical for over 10 years. While not at work she enjoys cooking, spending time with her family, and traveling.

BENEFITS OF WEIGHT LOSS SURGERY

Weight loss surgery is a major undertaking and is a serious decision to consider. The impact of the operation on your overall health, not physical appearance, should be the driving factor as you think about this journey. In other words, consider surgery for your health, not to look good in a bathing suit.

Initial weight loss after surgery varies by procedure and is measured most commonly in terms of total body weight loss (TBWL%), but in the past has been also measured by a less precise standard of excess body weight loss (EBWL%). The range of expected weight loss by procedure is:

- Laparoscopic Sleeve Gastrectomy: 25-30% TBWL
- Laparoscopic RYGB: 30-35% TBWL
- Laparoscopic SADI-S: 35-40% TBWL
- Laparoscopic BPD/DS: up to 40% TBWL or greater

As you can see, there is increasing weight loss potential with increasing aggressiveness of the operation. However, this comes at a price of greater risk of vitamin deficiencies, increased risk of long-term complications such as bowel obstructions and ulcers (particularly with RYGB), increasing risk of malnutritional consequences, and greater risks of bowel habit changes and diarrhea. All of that can sound scary. We will help you understand and weigh the risks and benefits of each operation so that you are comfortable with your surgical decision.

Metabolic and Bariatric surgery has profound positive effects on the spectrum of medical problems and issues associated with excess weight. These include, but are not limited to:

- Diabetes
- Hypertension (High Blood Pressure)
- Obstructive Sleep Apnea
- Non-Alcoholic Fatty Liver Disease
- Osteoarthritis
- High Cholesterol
- Certain Cancers
- Gastroesophageal Reflux Disease (depending on the operation chosen)

DIABETES

Metabolic and bariatric operations are the most effective options available for the treatment of type 2 diabetes and can achieve long-term remission in 23-60% of patients[1]. Patients who have had shorter duration of diabetes, have a lower Hemoglobin A1C, and who do not require insulin have higher rates of remission of diabetes than those who have one or more of those risk factors. In addition to treatment of diabetes, bariatric surgery can also prevent it from developing. A French study showed that patients who underwent bariatric surgery had an 82% reduction in their risk of developing diabetes[2].

Even if patients do not achieve remission of their diabetes with surgery, patients nearly universally see improvement in the control of their diabetes and a decrease in their need for insulin and medications. Patients with type I diabetes likewise see a decrease in the amount of insulin they require generally after surgery.

HYPERTENSION (High Blood Pressure)

Weight loss, whether achieved by lifestyle, medications, surgery, or a combination of those significantly improves obesity related high blood pressure (hypertension). The rate of remission for hypertension after bariatric surgery is generally 30-40%; however, most patients will see a reduction in their need for blood pressure medication even if they do not achieve remission of hypertension.

OBSTRUCTIVE SLEEP APNEA (OSA)

Obesity is clearly a risk for OSA, and the weight loss associated with bariatric surgery can achieve remission of OSA in roughly 60-80% of patients[3,4]. Remission of OSA should be documented by a sleep study after surgery prior to discontinuation of CPAP.

NON-ALCOHOLIC FATTY LIVER DISEASE (NAFLD)

NAFLD is present in 50-90% of people with obesity and is a major cause of chronic liver disease, cirrhosis, and liver failure. It is a spectrum of steatosis (presence of increased fat in the liver), steatohepatitis (increased fat in the liver with associated inflammation), and fibrosis (scarring) as the end result of the process (cirrhosis). A 2021 study in the Journal of the American Medical Association demonstrated that bariatric surgery was associated with a much lower chance of a poor liver outcome (75% decrease) and major heart problems (50% decrease) at 10 years compared to non-surgical management of NAFLD[5].

JOINT PAIN/OSTEOARTHRITIS

Severe obesity is associated with joint pain and can exacerbate symptoms of osteoarthritis. Up to 75% of patients experience improvement in musculoskeletal pain after bariatric surgery. The reduction in systemic body inflammation, which is strongly associated with obesity, leads often to decreased arthritis symptoms even in the wrist joints and fingers[6].

HIGH CHOLESTEROL (Dyslipidemia)

Metabolic and Bariatric surgery often causes a significant improvement in a person´s lipid profiles after surgery. This included the different types of cholesterol (HDL or "good" cholesterol, LDL or "bad" cholesterol) as well as triglycerides[6].

CANCER

There is a known clear association between obesity and certain cancers including esophageal, renal cell (kidney), breast cancer, stomach cancer, colon cancer, rectal cancer, liver cancer, gallbladder cancer, pancreatic cancer, ovarian cancer, uterine cancer, thyroid cancer, and multiple myeloma. The reduction of cancer risk appears to be particularly pronounced with breast cancer (especially post-menopausal), endometrial cancer, pancreatic cancer, and colon cancer. However, several studies have demonstrated lower risk of developing any cancer after bariatric surgery compared to similar patients who did not undergo bariatric surgery[6].

GERD (Gastroesophageal Reflux Disease)

GERD is a significant known risk factor for the development of esophageal cancer and predominantly causes symptoms of heartburn, regurgitation of undigested food, or difficulties with swallowing. Metabolic and bariatric operations can have an impact on GERD, and it is dependent upon the type of procedure that is performed. In general, RYGB is a very effective anti-reflux operation with 70% of patients achieving improvement or remission of their symptoms at one year following surgery[7]. LSG has more unpredictable effects on GERD symptoms with some patients having improvement of their pre-operative symptoms, but up to 20-30% of patients developing new symptoms and most people continuing to have symptoms if they had them pre-operatively. This topic is evolving and there is ongoing debate and research regarding the impact of LSG on GERD.

REFERENCES

1. Schauer PR, Nor Hanipah Z, Rubino F. Metabolic surgery for treating type 2 diabetes mellitus: Now supported by the world´s leading diabetes organizations. Cleve Clin J Med 2017; 84:S47.
2. Bailly L, Schiavo L, Sebastianelli L, et al. Preventive effect of bariatric surgery on type 2 diabetes onset in morbidly obese inpatients: a national French survey between 2008 and 2016 on 328,509 morbidly obese patients. Surg Obes Relat Dis 2019; 15:478.
3. Sarkhosh K, Switzer NJ, El-Hadi M, et al. The impact of bariatric surgery on obstructive sleep apnea: a systemic review.Obes Surg 2013; 23:414.
4. Currie AC, Kaur V, Carey I, et al. Obstructive sleep apnea remission following bariatric surgery: a national registry cohort study. Surg Obes Relat Dis 2021; 17(9); 1576-1582.
5. Aminian A, Al-Kurd A, Wilson R, et al. Association of Bariatric Surgery with Major Adverse Liver and Cardiovascular Outcomes in Patients with Biopsy Proven Non-alcoholic Steatohepatitis. JAMA 2021; 326:2031.
6. Telem D, Greenstein AJ, Wolfe B. Outcomes of Bariatric Surgery. UpToDate. Updated Aug 08, 2022.
7. Hutter MM, Schirmer BD, Jones DB, et al. First report from the American College of Surgeons Bariatric Surgery Center Network: laparoscopic sleeve gastrectomy has morbidity and effectiveness positioned between the band and the bypass.Ann Surg 2011; 254;410.

WHO QUALIFIES FOR METABOLIC AND BARIATRIC SURGERY?

WHAT IS BODY MASS INDEX (BMI)?

Body Mass Index (BMI) is a measure of body fat based on the person´s height and weight that applies to ADULT men and women. The formula used is the person´s weight in kilograms divided by the square of their height in meters. BMI is used extensively in the weight loss surgery world and is used as one of the criteria by insurance companies for determining who qualifies for weight loss surgery. A BMI between 18.5 and 24.9 is considered a healthy weight range, the overweight range falls between 25 and 29.9, 30.0-34.9 qualifies as Class 1 obesity, 35-39.9 Class 2 Obesity, and >40 Class 3 (Severe) Obesity. Most of the adverse effects of obesity begin to show up once the BMI goes over 30.

WHO QUALIFIES FOR BARIATRIC SURGERY AT THE METABOLIC AND BARIATRIC SURGERY CENTER OF EVANGELICAL?

Candidates for weight loss surgery should meet the following criteria:

- •Patients who have a BMI >35 regardless of the presence or absence of co-morbid conditions (conditions associated with excess weight)
- Patients who have a BMI >30 (> or equal to 27.5 in the Asian population) with severe weight related health problems including diabetes, difficult to control high-blood pressure, heart disease and obstructive sleep apnea
- Age > or equal to 18 and <65 years old*
- Males with a BMI <55 and Females with a BMI<60*
- Patient without:*
  - o Organ failure (i.e., severe congestive heart failure, end-stage renal (kidney) disease, severe liver disease, etc.
  - o Prior organ transplant
  - o Significant cardiac (EF > or equal to 35%) or pulmonary impairment (not O2 dependent)
- Patients must not be a candidate on a transplant list*
- Patients must be ambulatory*
- No active or recent substance abuse history (at least one year free of substance abuse)
- Age >18
- No history of uncontrolled psychiatric or eating disorders

(Specific criteria can vary by insurance provider) **ASMBS Accredited Low Acuity Center Criteria*

Bariatric surgery is not for everyone and a careful evaluation with our multi-disciplinary team, including behavioral medicine evaluation, will help determine if you are a good candidate. The Metabolic and Bariatric Surgery Center of Evangelical offers the following weight loss operations:

- Laparoscopic Sleeve Gastrectomy
- Laparoscopic Roux-en Y Gastric Bypass
- Single Anastomosis Duodeno-ileostomy with duodenal
- Biliopancreatic Diversion with Duodenal Switch

The choice of operation is a complex interactive decision between the patient and surgeon that factors in the patient´s individualized goals, the short and long-term efficacy and consequences of an operation, patient preferences, and a personalized risk assessment of the patient´s medical conditions. We will listen to your goals and concerns, working together with you in the decision-making process.

TYPES OF METABOLIC AND BARIATRIC SURGERY

LAPAROSCOPIC SLEEVE GASTRECTOMY (LSG)

LSG is currently the most commonly performed weight loss operation in the United States and involves removing approximately 80% of the stomach's capacity through minimally invasive means. This results in the body of the stomach having more of a tubularized "banana" shape to it than its normal shape and causes significant changes in the amount of food that it takes to feel full. More importantly, the operation induces changes in gut hormones that have positive impacts on hunger, satiety (feeling full), and control of blood sugar. The extent of these effects is somewhat variable, as with any weight loss operation. Patient's generally lose between 25 and 30% of their total body weight, though patients can achieve significantly greater weight loss with continued diligence and hard work. The short-term and long-term complication rate, hospital stay, rate of emergency department visits after surgery, and readmission rate are lower than seen with Roux-en Y gastric bypass (RYGB). Additionally, the chance for malnutrition and vitamin/nutrient deficiencies is lower than RYGB. However, some studies show that patient's with sleeve-based operations may develop significant heartburn or reflux symptoms and if patients have significant reflux symptoms pre-operatively, they may be better served with a Roux-en Y gastric bypass. Outcomes with diabetes appear to be fairly similar to RYGB[1,2], with RYGB trending toward better long-term improvements in diabetes[3,4].

Advantages

- Induces rapid and significant weight loss
- Shorter operative time
- Shorter hospital stay
- Less of readmission or Emergency Department visits within 30 days of surgery
- No risk of bowel obstruction or ulcer related to surgery over the long-term
- Does not require re-routing of the intestines
- Lower risk of vitamin deficiencies and malnutrition
- Minimal affect on bowel habits
- Lower rate of dumping symptoms
- Causes changes in gut hormones that have positive effects on hunger, satiety, and blood glucose control

Disadvantages

- Non-reversible (80 percent of the stomach is removed)
- Slightly less weight loss and impact on diabetes overall compared to RYGB
- May not be the best operation in someone with reflux/heartburn before surgery or someone who wants to avoid it after surgery
- Still has some potential for vitamin deficiencies after surgery (particularly B-12) and patients are required to take life-long vitamin supplementation

LAPAROSCOPIC ROUX-EN Y GASTRIC BYPASS (RYGB)

RYGB has been a common weight loss operation for many decades now. It involves partitioning and dividing the stomach into two parts—one small 30 ml "pouch" that is the functional part of the stomach, and the much larger "remnant" stomach which is the unused part of the stomach. The small intestine is divided in the portion of the small intestine known as the jejunum and the far side of that division is brought up and connected to the pouch. Then, the near side of that division is hooked back into the small intestine about 150 cm downstream thereby bypassing that portion of the intestine. Nothing is removed during this operation. The remnant stomach continues to secrete gastric juices and the digestive enzymes from the stomach and pancreas mix with the ingested food where the small intestine was reconnected after the bypassed segment.

RYGB patients lose, on average, approximately 30-35% of total body weight, and the operation also induces changes in gut hormone levels that have positive affects on hunger, satiety, and blood sugar levels. Vitamin and mineral deficiencies (including iron) are common and patients are required to take life-long vitamin supplementation. 10-20% of RYGB patients will develop ulcers where the pouch and intestine are connected (marginal ulcers) which are usually treated with medication, but can cause significant problems in terms of pain, nausea, and vomiting for patients. Additionally, some of these ulcers will perforate necessitating emergency surgery.

Because of the re-routing of the intestine, RYGB patients also will have a life-long risk of bowel obstructions from what are known as internal hernias, intussusception, or adhesions. While the risk is low overall, these problems represent (along with ulcer related problems) the most common reasons for emergency surgery after RYGB.

The effect of RYGB on diabetes is slightly stronger than that of LSG. Remission rates appear to be slightly higher and relapse rates lower in most, but not all studies, versus LSG. Approximately 70% of patients who have GERD have improvement or remission of their symptoms at one year after RYGB[5].

Advantages

- Induces rapid and significant weight loss
- RYGB has a very long track record
- Results somewhat more reliable than LSG (higher percentage of people lose >50% of EBW)
- Induces favorable changes in gut hormone levels with positive effects on hunger, satiety, and blood sugar
- Offers good control of GERD symptoms in most patients with GERD

Disadvantages

- More complex operation than LSG with re-routing of the intestine
- Increased risk of vitamin/mineral deficiency and need for life-long supplementation
- Higher readmission rate and rate of Emergency Department visits after surgery
- Life-long risk of ulcers
- Potential for bowel obstructions from internal hernias, adhesions, or intussusception

SINGLE ANASTOMOSIS DUODENO-ILEOSTOMY WITH DUODENAL SWITCH (SADI-S)

SADI-S is a newer variation on an operation known as the bilio-pancreatic diversion with duodenal switch (BPD-DS). The BPD-DS has the highest weight loss and the best affect on diabetes of any of the weight loss operations used in practice; however, it also is the most complex and comes with the highest risk of malnutrition, severe protein deficiency, vitamin deficiencies, and changes in a patients bowel habits (diarrhea and foul smelling) gas. The SADI-S was developed to try and harness the positive effects of the BPD-DS while minimizing the negative consequences of the operation. It involves a sleeve gastrectomy as described previously, but the small intestine is divided just beyond the pylorus (sphincter valve at the end of the stomach) at the duodenum. The small intestine is measured for 250-300 cm backward from where the small intestine (ileum) and the colon come together, and the end of the duodenum is connected to the side of the small intestine at that point. This results in excellent weight loss that is between 35-40% of TBW and produces the same types of changes in gut hormones described previously that increase satiety, decrease hunger, increase insulin production, and insulin sensitivity of the tissues of the body. The results on diabetes are more significant than those seen with RYGB and almost as strong as those seen with BPD-DS. Long-term studies, however, are not yet definitive on whether the operation significantly decreases the important long-term nutritional and vitamin/mineral deficiencies seen with the BPD-DS, though this appears promising. Patients who have either the SADI-S or the traditional BPD-DS MUST be committed to life-long vitamin supplementation and life-long medical surveillance, as they can encounter life-threatening nutritional and metabolic consequences if they are not diligent in these areas.

SADI-S also has the advantages of ulcer rates that are significantly less than those of RYGB, as well as internal hernia and obstruction rates that are significantly less than RYGB. Concerns related to GERD are not as pronounced as those related to LSG with described rates of reflux significantly less than LSG.

Advantages

- Rapid and significant weight loss, greater than seen with RYGB and LSG
- Better control of diabetes than RYGB and LSG
- Lower ulcer and obstruction rate than RYGB
- Less profound effect on bowel habits than BPD-DS
- May have lower rate of malnutrition and some vitamin deficiencies than BPD-DS (research is evolving on this subject)

Disadvantages

- More complex operation than RYGB and LSG
- Greater risk for malnutrition and vitamin deficiencies than RYGB and LSG, life-long surveillance, and supplementation is mandatory
- Newer operation than RYGB and LSG
- Still has some risk of marginal ulcers (very low) and obstruction, though significantly lower than RYGB
- Potential for bowel habit changes

REFERENCES

1. Peterli R, Borbely Y, Kern B, et al. Early results of the Swiss Multi-centre Bypass or Sleeve Study (SM-BOSS): a prospective randomized trial comparing laparoscopic sleeve gastrectomy and Roux-en-Y gastric bypass. Ann Surg 2013; 258;690
2. Salminen P, Helmio M, Ovaska J, et al. Effect of Laparoscopic Sleeve Gastrectomy vs. Laparoscopic Roux-en-Y Gastric Bypass on Weight Loss at 5 Years Among Patients With Morbid Obesity: The SLEEVEPASS Randomized Clinical Trial. JAMA 2018; 319:241.
3. McTigue KM, Wellman R, Nauman E, et al. Comparing the 5-Year Diabetes Outcomes of Sleeve Gastrectomy and Gastric Bypass: The National Patient-Centered Clinical Research Network (PCORNet) Bariatric Study. JAMA Surg 202; 155:e200087.
4. Park CH, Nam SJ, Choi HS, et al. Comparative Efficacy of Bariatric Surgery in the Treatment of Morbid Obesity and Diabetes Mellitus: a Systematic Review and Network Meta-Analysis. Obes Surg 2019; 29:2180.
5. Hutter MM, Schirmer BD, Jones DB, et al. First report from the American College of Surgeons Bariatric Surgery Center Network: laparoscopic sleeve gastrectomy has morbidity and effectiveness positioned between the band and the bypass. Ann Surg 2011; 254;410.

POTENTIAL COMPLICATIONS OF METABOLIC AND BARIATRIC SURGERY

The decision to undergo metabolic and bariatric surgery must be a thoughtful one, carefully weighing the advantages and disadvantages of the different operations, and having an honest conversation with yourself about your individual risk tolerance. While there are many incredible benefits to metabolic and bariatric surgery, they do not come without potential short-term and long-term risk. Many of the potential complications of surgery are common to all the different operations, while some may be particular to others. **It is vitally important that you read and understand these risks prior to signing the consent form for surgery.** If you have questions, please write them down and ask them via MyChart, phone call, or when you come to the clinic.

Long-term risks of metabolic and bariatric surgery include, but are not necessarily limited to:

- Failure to reach your goal weight or weight regain
- Nutritional deficiencies that can lead to a wide variety of symptoms. Among these are neurologic symptoms (thiamine, vitamin E), anemia (B12, Iron), bone density issues (vitamin D, Calcium), immune system compromise (vitamin D), vision changes (vitamin A), and blood clotting issues (vitamin K). **You will be required to take life-long vitamin supplementation after surgery** (specifics discussed elsewhere in the surgery owner´s manual).
- Potential intolerance to certain foods. These tend to be more prominent with pouch-based operations such as the RYGB.
- Hair Loss
- Dumping syndrome (the stomach empties into the small intestine faster than it should)
- Nausea and/or vomiting. Nausea tends to be slightly more pronounced in LSG in the early post-operative period versus the other operations.
- Gastrointestinal/Bowel Habit changes such as diarrhea or constipation. This is more common with RYGB, SADI-S, and BPD/DS. Loose stools are very common after SADI-S and BPD/DS (most common) with most patients having 2-4 mushy bowel movements per day. With LSG, these symptoms are generally not seen other than those related to dietary changes.
- Development of ulcerations in the gastrointestinal tract. This is most commonly seen with RYGB (10-20%), much less commonly with SADI-S and BPD/DS, and not an increased risk with LSG. Ulcers are generally treated with medications but can be chronic (long-lasting and difficult to treat) leading to pain, nausea, vomiting, inability to eat well, and even perforation. In these cases, additional surgery may be required.
- Development of or worsening of pre-existing heartburn or other symptoms of gastro-esophageal reflux disease (GERD). This is most associated with LSG or sleeve-based operations such as SADI-S and BPD/DS, though appears to be significantly less common with SADI-S and BPD/DS.
- Development of narrowing (strictures) at staple lines or connections of the stomach or bowel to one another. These are generally treated endoscopically by stretching the area, but if they prove refractory (difficult to treat and won´t go away) additional surgery may be required.
- Bowel obstructions due to internal hernias, adhesions, or hernias at incision sites. This is a life-long risk as they can happen at any time after surgery. These are far more common with RYGB and BPD/DS, less common with SADI-S, and virtually never happen with LSG.
- Hyperinsulinemic Hypoglyciemia (too much insulin being produced after you eat dropping your blood sugar). This is most common after RYGB and rarely happens with LSG.

Short-term complications include, but are not limited to:

- Nausea and Vomiting
- Bowel obstructions requiring readmission or return to the operating room. These are generally seen with RYGB, SADI-S, BPD/DS, and not usually a risk associated with LSG.
- Bleeding that could require transfusion or operation. Transfusions carry a minuscule risk of transmission of hepatitis and HIV. Transfusion related reactions are much more common than any infectious related complication of transfusion. The risk of needing a blood transfusion is very low and blood loss during surgery is generally less than a tablespoon.
- Infections of the wounds, urine, bloodstream, or pneumonias are possible, but highly unlikely.
- Injury to bowel, blood vessels, or organs in the abdominal cavity from the instruments used for surgery. No matter how conscientious the surgeon is, these injuries are a remote possibility and the risk is inherent to surgery. This is a very uncommon occurrence, but can possibly require return to the operating room in the unlikely event that it would happen.
- Leaks from staple lines or connections between the stomach or bowel to one another. These most generally require return to the operating room for management. These can lead to severe infections and even death if not treated. Call the office 570-523-3290 (during business hours) or Evangelical Community Hospital (after business hours) at 570-524-2000 immediately if you experience
  - o Fever over 101
  - o Increasing redness, swelling, and or pus-like drainage from your wounds
  - o Significant chest pain and/or shortness of breath. If sudden onset or severe you may need to call 911. This can represent a blood clot in the lungs or heart attack.
  - o Heart rate >110 or feelings of heart racing
  - o Persistent or worsening nausea, vomiting, or abdominal pain (not relieved by medication or preventing fluid intake for a day)
  - o Vomiting blood or stools that are maroon or frankly bloody
  - o Pain, redness, or swelling in your calves or legs
- Life threatening neurologic (stroke) problems, respiratory or breathing problems, blood clotting problems (blood clots in the lungs), or heart problems such as heart attack up to and including death.

MBSAQIP RISK/BENEFIT CALCULATOR

Individual risk for complications varies. To help weigh the risks and benefits of surgery the American Society for Metabolic and Bariatric Surgery (ASMBS) provides a risk calculator that help you determine your 30-day risk of complications, readmission, and reoperation for each bariatric procedure as well average weight loss curves for each operation tailored to your weight and medical condition. Additionally, anticipated remission rates of your obesity related conditions (diabetes, high blood pressure, high cholesterol, sleep apnea, etc.) can also be determined. This tool can be found online at: **https://riskcalculator.facs.org/bariatric/**

GETTING YOU READY

In general, patients are referred into the program by their primary care provider. An initial evaluation is then scheduled with one of the bariatric surgeons and the bariatric nurse. At this visit a thorough evaluation and inquiry into your health history, previous diet attempts, and exercise habits is performed, and an overview of the program and different surgical options given. The process generally takes 6 months or more to complete and follows the framework below:

Visit	Providers	Purpose
Initial Visit	Surgeon, RN	• History and physical • Screening labs ordered • OSA screening • Exercise and dietary history reviewed • Program and surgical options reviewed • RD consultation ordered
RD consultation (approximately 2 weeks after initial visit, every 4-6 weeks afterward)	Registered Dietitian	• Dietary and nutritional assessment • Counseling • Instruction in food journaling • Instruction in pre-operative weight loss
Progress Visit 1 (4-6 weeks)	Surgeon, RN	• Review labs • Follow up on behavioral and dietary changes • Initiate treatment for vitamin deficiencies
Progress Visit 2 (4-6 weeks)	Surgeon, RN	• Follow up on behavioral and dietary progress/weight loss • Order EKG/US, sleep study if indicated, endoscopy if indicated • Behavioral medicine consultation ordered • Obtain cardiology, endocrinology, GI, or pulmonary consults as necessary. • PCP letter of support is requested
Progress Visit 3 (4-6 weeks)	Surgeon, RN	• Assess progress on behavioral and dietary changes/weight loss • Review behavioral medicine evaluation • Pre-operative packet given for patient to review
Progress Visit 4/Pre-op visit	Surgeon, RN	• Assess progress on behavioral and dietary changes/ weight loss • Confirm all appropriate consultations have been obtained • Informed consent discussion • Pre-operative teaching and preparation (Pre-op diet instruction, incentive spirometry, pre-operative Hibiclens scrub, DVT/PE prevention, etc.) • Pre-operative history and physical • Auricular acupuncture education • Financial liability and controlled substance agreements signed

As you progress through the program there will be a series of tests and evaluations done. Some of these are routine in every patient going through the program, while others are dependent upon the patient´s medical history. We encourage you to ask questions at any point if you don´t understand why something is being done.

STOP SMOKING

Smoking is a habit that can have profoundly negative health consequences over the long term and is a strong risk factor for certain complications after bariatric surgery, particularly respiratory (breathing) complications and ulcers. Smoking cessation is mandatory prior to bariatric surgery. The following is our smoking/nicotine/tobacco policy:

All patients who are smoking upon entering the program will be required to have a period of abstinence of 2 months prior to scheduling surgery. A negative nicotine/cotinine test will be the pre-operative visit before a definitive surgical date is given. Pre-operative nicotine/cotinine testing will be required of all patients who have a history of smoking within one year of entering the program. If a patient is on nicotine replacement, an anabasine test (which will measure tobacco use in a patient on nicotine replacement) will be performed.

All patients using other tobacco products or vaping will be required to stop use for 2 months prior to surgery as per the smoking guidelines.

ALCOHOL AND SUBSTANCE ABUSE

The following is our alcohol and substance abuse policy:

In all patients who consume alcohol we require a 2 month period of abstinence prior to surgery. Patients who have a history of alcohol abuse or other substance abuse must demonstrate a period of abstinence of 2 years. If active abuse is identified during the course of the program the patient will be referred to behavioral medicine assistance.

SLEEP APNEA SCREENING

Obesity is a significant risk factor for Obstructive Sleep Apnea (OSA), a condition that can increase the risk of breathing complications after bariatric surgery and over the long-term can lead to significant heart issues and right heart failure. All patients entering the program will be assessed for their risk of sleep apnea and those determined to be at intermediate or high risk will undergo a sleep study to determine if they have the condition. If the sleep study is positive for OSA, patients most often are placed on Continuous Positive Airway Pressure (CPAP) at night to treat the problem. Treating the sleep apnea before surgery can lower the chance of breathing problems after the operation.

CARDIAC (HEART) EVALUATION

As part of the program your surgeon will assess your cardiac risk factors and refer you for a cardiology evaluation in the presence of multiple risk factors. You will get an EKG as a matter of routine, but if further evaluation and cardiology consultation is needed you may need a cardiac stress test. We will see that you are referred for the appropriate consults and tests to ensure the safest possible bariatric surgery.

DIABETES MANAGEMENT

Having good control of diabetes helps decrease complications after bariatric surgery. All patients entering the program will have their hemoglobin A1C measured. This provides a window into what the blood sugar control has been like for a person over a 3-month period of time or so. If a patient has difficult to manage diabetes or a hemoglobin A1C greater than or equal to 8, an endocrinology consultation will be obtained prior to surgery for any recommendations or changes necessary.

LIVER AND GALLBLADDER EVALUATION

All patients entering the program will have an ultrasound of their liver and gallbladder (if it is still present) to assess for evidence of Non-Alcoholic Fatty Liver Disease (NAFLD). If evidence of NAFLD is present on ultrasound, a small liver biopsy at the time of surgery may be warranted to assess for the possibility of fibrosis and to help understand the true extent of the disease. Fortunately, bariatric surgery is the best treatment in the medical field for NAFLD and you will likely experience significant improvement in the NAFLD with time after surgery. Although this is most often the case, it is not universal.

If patients are found to have gallstones on their ultrasound, it will most likely be recommended that it be removed at the time of bariatric surgery. Ultimately, however, the decision is made between the patient and the surgeon. If having anything other than a sleeve gastrectomy, leaving the gallbladder with its stones can lead to increased difficulty managing some of the complications of gallstones, such as when they move into the ducts that drain the liver and pancreas.

BEHAVIORAL MEDICINE EVALUATION

Weight loss surgery is only a tool to help patients reach their goals for better health. As such, long term success is heavily dependent on the behavioral and lifestyle changes that must accompany the operation. We want to ensure that each patient is able to cope with the challenges and stresses of long-term maintenance, and we want to help eliminate any barriers a patient may have to success. As part of the pre-operative preparation process, each patient will undergo a thorough behavioral medicine evaluation to help maximize their chances for life-long health. This is a requirement from insurance companies before they will approve your surgery. This evaluation covers:

- o Your lifestyle (e.g., sleep, exercise, smoking, drinking)
- o Your understanding of the lifestyle changes necessary to have a good outcome
- o Your ability to cope with stress
- o Your compliance and ability to follow a treatment regimen (diet, exercise, supplements)
- o Your support network
- o Any psychological issues that could affect your surgical outcome such as:
    - o Binge eating, sugar addiction
    - o Other psychological issues such as depression, anxiety, alcohol abuse
- o Any concerns you may have about surgery or lifestyle changes

DIETARY EVALUATION / NUTRITIONAL COUNSELING

As part of your pre-operative evaluation you will undergo dietary and nutritional assessment and counseling by our program´s registered dietitian. Additionally, you will be screened for pre-surgical deficiencies of vitamins and minerals (thiamine, vitamin B12, folate, ferritin, transferrin saturation, vitamin D, calcium, fat-soluble vitamins A, E, and K, zinc, and copper), as well as screening for thyroid function. Your metabolic health will be assessed by checking your fasting insulin level, hemoglobin A1C (mentioned above), and your cholesterol/lipid levels. Additionally, our dietitian will instruct you on using a food journal and provide nutritional counseling to help you in your weight loss journey both before and after surgery. Documentation of your participation in a structured nutritional and exercise program is required by most insurance carriers.

HEALTH COACHING

Maximizing your chances of successful and sustained weight loss with surgery is about making the behavioral and lifestyle modifications that MUST accompany the operation. Remember, the surgery is only a tool to help you get to where you want to go. Surgery by itself, if not accompanied by behavioral and lifestyle changes,will not get and keep you there. We want to help you develop healthy lifestyle habits BEFORE surgery that you can carry over AFTER surgery. To help you, our program has partnered with Community Health and Wellness to offer a a program exclusively developed for our bariatric patients. Led by Certified Health Coaches, this program will extensively address lifestyle habits and factors including stressors, eating, exercise, addictive behaviors such as smoking, and sleep habits that potentially affect your outcome, connecting you with resources within the Lewisburg YMCA at The Miller Center and throughout the community that enhance your ability to achieve your health goals. If you would like to take advantage of personalized Health Coaching after surgery, discounted rates and scholarships are available to our metabolic and bariatric patients if needed. We don´t want cost to be a barrier to you achieving your health goals.

EXERCISE

Exercise is critical to your success with surgery and to your overall health, decreasing your risk of cancer, heart disease, cholesterol issues, high blood pressure, stroke, and diabetes. Additionally, certain types of exercise can slow the changes in our DNA that cause the aging process. Getting into a good exercise routine before surgery builds a strong foundation, serving as "pre-habilitation" before your surgery and may decrease your hospital stay. You should have a goal of exercising 30 minutes or more per day, 5 days a week. After surgery, exercise is foundational to maximizing weight loss and maintenance of that weight loss. You will feel better and have more energy to do the things that you want to do. **Don´t make excuses in this area. Start somewhere. Find something you CAN do and DO IT!** If you cannot do 30 minutes of exercise at a time, start small with 5 minutes at a time, a few times a day. **YOU CAN DO THIS!** It is critical that your cardiovascular exercise is strenuous enough to elevate your heart rate and have you breathing harder than normal. Resistance exercises/ weight training is important, particularly after surgery, to maintain your lean muscle mass. Inexpensive resistance bands can be purchased from many stores or online and are a great way to incorporate resistance training into your routine.

PHARMACOTHERAPY (WEIGHT LOSS MEDICATIONS)

Obesity is a chronic disease sometimes requiring multiple approaches for successful treatment. This is not unlike when cancer is treated with surgery, chemotherapy, and/or radiation. Several weight loss medications have been developed that can help patients achieve success. The most common and best of these medications are ones that mimic gut hormones that the body makes naturally (i.e. GLP-1, GIP). These are sometimes utilized before surgery to help patients lower their operative risk and increase their chances of long-term success from surgery. In other instances, the medications can be used after surgery to help patients whose weight loss has been inadequate. Insurance coverage for these medications varies widely.

LETTER OF SUPPORT FROM PCP

Our program, as well as most insurance carriers, requires a letter of support for the surgery from the primary care physician or physician who is currently providing care and is familiar with your health history, health risks, and current health status including issues related to obesity. Our Bariatric Nurse will request this letter from your physician after you have started in the program, usually at the third visit.

SUPPORT GROUP ATTENDANCE

In order to achieve the best possible outcome with metabolic and bariatric surgery, the multidisciplinary team provides pre-operative education and support classes, as well as post-operative support group settings where nutrition, exercise, and behavioral modification are reinforced at monthly support group meetings. Additional benefits of attending support groups include:

- Fellowship through a common bond
- Up-to-date information about surgery and the latest developments
- Information about vitamin and protein supplements
- Hearing from post-surgery patients who share their experiences, successes, and struggles with patients waiting for surgery

While patients are required to attend a minimum of two support group meetings in order to meet program and insurance criteria, it has been shown that patients who continue to attend the support group meetings both before and after surgery are more successful.

The support group is open to both pre-and post-operative bariatric patients including their families, friends, and support people and is held the first Wednesday of each month with no support groups held during the months of June and July. A schedule outlining the topics and speakers for the year is available and is distributed to all interested patients. Patients can view the dates and times for the support group on Evangelical Community Hospital's website at www.EvanHospital.com.

PRE-ADMISSION CARE (PAC) VISIT

Two to three weeks before your scheduled surgery, you will be scheduled for your PAC visit. The scope of testing performed during your PAC visit may include blood tests, an EKG, as well as any additional tests required by your physician. **It is vitally important that you bring a complete list of the medications you are currently taking, the dosage, and the frequency to this visit.**

When you arrive at the hospital for your PAC appointment, you will report to the registration desk. Please report 15 minutes prior to your appointment time. After you have given your insurance information to the registration clerk, you will be directed to the PAC/Laboratory waiting area. This is a dual-purpose waiting area for outpatients and pre-surgical patients. You will then meet with a registered nurse who will ask you questions about your health history and review your medications with you. This is a good time to ask questions that you may have regarding your surgery and recovery. If it is indicated, some patients may also meet with a social worker, physical therapist, or the anesthesiologist. Please allow 1.5-3 hours for the entire process.

READY FOR SURGERY

ONE MONTH BEFORE SURGERY

- Prehabilitation
  - o Begin or continue cardiovascular exercise 30 minutes per day, 4-5 days per week to get your heart and lungs ready for surgery. This can help decrease your length of stay and aid in your recovery.
  - o Use your incentive spirometer as instructed 4 times per day, 10-15 repetitions for 1-2 weeks prior to surgery
- Stop hormone replacement therapy (estrogen), birth control pills, and herbal supplements. You may resume these one month after surgery
- No Depo-Provera shots for **3 months** prior to surgery due to the increased risk of blood clots. You may resume these one month after surgery.

TWO WEEKS BEFORE SURGERY

- Begin your high protein liquid diet as instructed
- Make sure you have what supplies you need for before and after surgery
  - o What to have prior to surgery
    - Maltodextrin pre-operative drink
    - Incentive Spirometer
    - Listerine or anti-bacterial mouthwash
    - Hibiclens soap
  - o What to have on hand for after surgery
    - Liquid, sugar free adult Tylenol if you cannot tolerate pills or caplets
    - Gas-X (simethicone), liquid Mylicon, or Gaviscon in case of gas pain
    - Zofran (Prescription picked up)
    - Lovenox (blood thinner) (Prescription picked up)
    - Stock of preferred protein drinks, yogurt, etc.
- Make sure you are clear about what medications (if any) you need to stop prior to surgery and when.
- If you are diabetic, make sure you are clear about any changes to your medication or insulin regimen leading up to surgery.

DAY BEFORE SURGERY

- Hibiclens shower is to be taken from chin to toes the night before surgery paying special attention to skin folds and creases.
- Remove all fingernail polish. Clear acrylic nails are acceptable.
- Swish and gargle with Listerine for 60 seconds morning and evening the day before surgery.
- Drink Maltodextrin (Ensure Pre-op) drink before bed as instructed.
- No insulin or diabetic medications after midnight prior to surgery (unless instructed otherwise by a physician)

MORNING OF SURGERY

- Non-diabetic patients may have clear liquids up to 2 hours prior to arrival. Diabetic patients may have clear liquids up to 4 hours prior to arrival.
- Hibiclens shower is to be taken from chin to toes the night before surgery paying special attention to skin folds and creases.
- Swish and gargle with Listerine for 60 seconds
- Take all scheduled heart, seizure, and blood pressure medications (with the exception of ACE/ARB medications) as ordered by your physician with small sips of water.
- Do not use make up, deodorants, body powder, lotions, body sprays, or perfumes as these can increase infection risk. You may bring them for use after surgery.
- Bring your CPAP device to the Hospital if applicable.
- Remove all jewelry and body piercings and leave them at home.

COMING TO EVANGELICAL COMMUNITY HOSPITAL

When you come to the hospital the morning of surgery there are a few things that you will want to bring with you:

- All medications and an accurate list of medications containing the name, dose, frequency, and route of administration. These will be reviewed with you along with when you last took them when you come to the hospital prior to surgery.
- If you use CPAP, please bring your own device with you to the Hospital.
- Your Metabolic and Bariatric Surgery owner´s manual!
- Protective cases for breakable items such as glasses, dentures, hearing aids, contacts, etc.
- Underwear and clothing for 1-2 days following surgery. Loose fitting clothing is usually best in the first days after surgery.
- You may want to bring your own pillow for a more comfortable night of sleep.
- Consider bringing a robe and slippers for walking in the hallways.

PRE-OPERATIVE EXPERIENCE

Once you arrive and enter the Hospital through the main entrance, you will be directed to the registration area to get checked in for surgery. From there, you will be escorted to the One Day Surgery area on the second floor of the Hospital where the pre-surgical area, operating rooms, and recovery areas are located. You will change into a surgical gown and your pre-operative nurse will ask you a series of questions, review your medications, and take your vital signs. Additionally, the nurse will start an IV, administer a blood thinner (usually a small shot in the abdomen), and give you a few medications to minimize pain and nausea after surgery. If you have consented to auricular acupuncture to prevent/reduce post-operative nausea and vomiting it will be done at this time. The anesthesiologist will visit with you and discuss the anesthetic plan of care with you, answer any questions, and obtain consent for anesthesia. Your surgeon will answer any last-minute questions you may have at this time as well. Once you are all ready and the operating room is ready you will be wheeled to the operating room and those who came with you will be shown to the waiting room.

INTRA-OPERATIVE EXPERIENCE

Once you move over onto the operating room table, the anesthesiologist or nurse anesthetist (CRNA) will attach their monitoring probes to keep track of your vital signs during surgery. Devices that squeeze your calves to help circulate the venous blood back to the heart and prevent blood clots will be placed on your lower legs. **We do not place urinary catheters, drains, or naso-gastric tubes as a matter of routine.** General anesthesia will be administered, and you will drift to sleep. In general, laparoscopic sleeve gastrectomies take 45-60 minutes, RYGB's 75-120 minutes, and SADI-S 90-120 minutes. These are ballpark time frames and are dependent on patient size, anatomy, intra-operative findings, and whether additional procedures are being performed. During the operation we will keep a close eye on your temperature and blood sugars. Additionally, many medications will be utilized to minimize discomfort and nausea/vomiting after surgery including a special abdominal wall nerve block using local anesthetic that is performed laparoscopically. Narcotics are avoided. Once the operation is completed the anesthesiologist or CRNA will wake you up and you will be moved to the recovery area.

AFTER SURGERY

You will spend a couple of hours in the recovery area (often called the post-anesthesia care unit, or PACU). Your vital signs will be closely monitored, and your nurse will give you medications for pain and nausea as necessary. Once you have met criteria for discharge from the PACU, you will be taken to your room. Nurses on this unit are experienced in taking care of metabolic and bariatric surgery patients. You will begin to get out of bed and gradually increase your walking at this time to get your mobility back as soon as possible and to prevent blood clots. To help your lungs fully open up so that they can take in oxygen better and prevent pneumonias, you will start using your incentive spirometer every hour while you are awake as well as doing deep breathing and coughing exercises. If necessary, your blood sugars will be monitored periodically, and you will be on a Stage I diet.

Some discomfort is entirely normal, and you should not expect to be discomfort free. Tylenol will be given in a scheduled manner while you are in the Hospital, and other non-narcotic pain medications will be utilized. Narcotics are given ONLY if pain cannot be controlled in any other manner. Narcotics have many potential side effects including urinary retention, nausea/vomiting, constipation, mental status changes, and the potential for addiction. You will not have a urinary catheter or naso-gastric tube unless there was a compelling reason to use one at the time of surgery.

The morning after surgery, blood thinners will be administered like in the pre-operative area and most patients continue this for 10 days (some will continue for 28 days if at particularly high risk for blood clots). Your diet will be advanced to Stage 2 and if you meet discharge criteria you will be allowed to leave the hospital the day following surgery. Discharge criteria include:

- Being able to ambulate independently
- Pain that is adequately controlled
- Afebrile, non-tachycardic, normal vital signs
- Nausea/vomiting has resolved or is clearly resolving. NO discharge if worsening nausea, pain, or abdominal pressure
- You are tolerating liquids well enough to stay hydrated

GOING HOME

POST-OPERATIVE PHONE CALL

You will receive a phone call from the Metabolic and Bariatric Surgery Coordinator within 72 hours of discharge to assess oral intake/hydration status, pain control, issues with nausea and or vomiting, and answer any questions the patient may have at that time. If you are having issues with oral intake and are at risk for dehydration you will be set up for outpatient IV hydration.

PATIENT COMMUNICATION ON HYDRATION

Staying hydrated is your main goal in the first two weeks after surgery. After you are discharged home, we ask that you contact our Bariatric Nurse by phone or by MyChart between 3:30 and 4 pm daily for the remainder of the week of your surgery (until Friday afternoon) to confirm that you have gotten 40 oz of fluid in by 4 pm. In this way we can identify whether you are having issues staying hydrated early and intervene if necessary.

BATHING AND INCISION CARE

You may shower 24 hours after surgery. Simply let the water run down over your incisions and pat them dry. Do not scrub the incisions with soap and water until they are completely healed. There is no need to apply hydrogen peroxide or antibiotic ointments to your incisions and some of these practices can actually impair wound healing. Avoid tub baths, swimming, and hot tubs until seen for your post-operative visit.

Some pink drainage from the wounds is quite normal, but should not be pus-like or associated with redness, swelling, and tenderness. These can represent signs of an infection and you should call the office to report these.

PAIN/DISCOMFORT MANAGEMENT

Take Tylenol 1000 mg by mouth every 8 hours for 3 days. Supplemental non-steroidal anti-inflammatory medications (NSAID) such as Celebrex 100 mg twice daily may be utilized mouth. In general, avoid other NSAID medications such as Ibuprofen, Motrin, Aleve, etc. No narcotic pain prescriptions will be given as a routine as almost all patients are able to manage their discomfort without the use of narcotics. Narcotic use carries with it the potential for significant side effects that can slow your recovery and the risk of addiction.

DIETARY ADVANCEMENT

You will be going home on the Stage 2a diet. Again, **staying hydrated is your main goal in the first two weeks after surgery**. The Stage 2b diet (Full liquids, eggs, and cheese) is started at the clinic visit approximately 3-4 weeks after surgery with a protein goal of 60-80 gm/day and a fluid goal of 48-64 oz/day. Usually, you will be advanced to the Stage 3 diet (Soft Texture, ground meats, rotisserie chicken, etc.) approximately 6 weeks after surgery with the protein goal of 60-80 gm/day and fluid goal of 48-64 oz/day. Between 10-15 weeks after surgery you will be advanced to Stage 4 (Regular Texture/Full Solids) as you can tolerate with a protein goal of 60-80 gm/day and a fluid goal of 48-64 oz/day.

ACTIVITY

Unless you have had some sort of hernia (hiatal hernia, umbilical hernia, incisional hernia, etc.) repaired at the same time as your bariatric operation, there is no specific lifting or activity restriction. As a general rule, if it hurts, stop the activity and try again in a few days. Once you go home you should try to gradually increase the amount of activity you are doing on a daily basis. Walking is strongly encouraged every day, climbing stairs is not a problem, and you may resume exercise routines as you feel comfortable doing so. Resistance exercises to maintain muscle mass are encouraged as soon as able.

DRIVING

You may resume driving when you can comfortably check your blind spots, depress the gas and brake pedals, and you are NOT taking narcotic pain medication. There is no specific time frame to this.

RETURNING TO WORK

Most people can return to work within 1-3 weeks after surgery, depending on the job you perform. If you have a particularly strenuous job or have lifting restrictions due to the type of operation that was performed and your employer cannot accommodate light duty for you, the time off work may be longer.

INCENTIVE SPIROMETRY/BREATHING EXERCISES

Use the incentive spirometer at least 4 times a day, 10-15 repetitions (for 1-2 weeks). Continue deep breath/cough exercises for 2 weeks. Your goal is to get to 2000.

PREGNANCY AND BIRTH CONTROL AFTER SURGERY

It is extremely important that women of childbearing age avoid getting pregnant for the first 12 months after surgery. Rapid weight loss and nutritional deficiencies can make pregnancy dangerous for both you and the baby. Patients sometimes see a significant increase in fertility with rapid weight loss and a solid plan for pregnancy prevention MUST be in place. If you become pregnant, please contact your surgeon and OB/GYN immediately so appropriate vitamin levels can be checked and supplementation started.

MEDICATIONS

Some of your medications may be stopped or dosages adjusted when you leave the Hospital. Please pay close attention to how your medication regimen may be changed. Follow up with your primary care provider should be arranged within 4 weeks of surgery to check on how your chronic medical conditions are responding to the medications after surgery. Further adjustments may be necessary as time goes on.

TAKING PERSONAL RESPONSIBILITY

Weight loss and health are a lifelong journey and commitment and it requires you to take responsibility for your success. Only eat to the point of feeling full or satisfied. You need to make healthy food choices, stay physically active, and modify your behaviors over the long haul to achieve lasting success. Lack of exercise, poorly balanced meals, constant grazing and snacking, and drinking beverages with significant calories are the basic causes of not maintaining weight loss. Sometimes, the changes leading to weight regain can be subtle decreases in activity or eating habits. Stay vigilant.

Many factors play a role in a person´s weight loss result after surgery, some of which you have no control over (genetics), but others (eating habits, exercise/activity levels) you do have control over. Regular exercise, both cardiovascular and resistance, helps boost your metabolism and maintain muscle mass. You must set aside dedicated time for exercise during your day and look for opportunities throughout your daily routine to increase activity levels. These things will significantly benefit your overall health both physically and mentally.

THINGS YOU MAY EXPERIENCE AND HOW TO HANDLE THEM

DEHYDRATION

In the first couple of weeks after surgery your emphasis should really be on maintaining hydration with good protein intake being icing on the cake. The most common reason for a patient to return to the emergency department of hospital after surgery is nausea, vomiting, and dehydration. These often go together and become a vicious cycle. To help make sure you are getting enough fluid, we want to you contact the bariatric nurse, Carol, via phone or MyChart by 4 pm for the first 2-3 days after surgery (depending on whether surgery was Tuesday or Wednesday) to confirm that you have gotten "40 x 4 pm," that is 40 oz of fluid by 4 pm. Your goal is 64 oz per day. If you are not getting enough fluid and are at risk for dehydration, we will likely set you up to get IV fluids as an outpatient.

DISCOMFORT / PAIN

Some discomfort is entirely normal after any surgical procedure. The severity of discomfort will vary by individual with some patients reporting no discomfort and others occasionally requiring significant medication. You will be taking Tylenol (acetaminophen) 1000 mg every 8 hours for 3 days after surgery. Depending on the type of operation you have had, you may be allowed an occasional NSAID dose for breakthrough pain. Abdominal binders can be helpful in managing discomfort. Interestingly, getting up and moving about with some walking can help the discomfort subside ultimately. Ice to areas of soreness, as well as warm compresses for 30 minutes at a time can be helpful. If your pain is unrelenting or is continuing to increase in severity, please call your surgeon.

CONSTIPATION

Constipation is a common complaint in the early weeks after surgery and can be caused by many things including, dehydration, high protein intake, narcotic pain medication, low activity levels, iron supplements, thyroid problems, and more. If constipation is severe enough it can cause significant abdominal pain, nausea, and vomiting. Fortunately, there are simple things that can help in this area:

- Staying hydrated
- Increasing activity
- Using a powder-based fiber (OTC) that will not thicken in liquid
- Milk of magnesia may be used if no bowel movement for 3-4 days
- Using Miralax 1-2 times per day if constipation has lasted more than 4-5 days

FOOD STICKING

If food is not passing through your stomach you may experience abdominal pain, cramping, heartburn, excessive salivation, chest pressure/pain/fullness, nausea, and vomiting or heaving. There is some degree of swelling where the surgery has taken place, making the channel of the sleeve or pouch connection to the small intestine functionally smaller than it actually is. This problem is usually avoidable by doing three things:

- Take small bites
- Chew all food with any substance to the consistency of something that has gone through a blender
- Take 20 seconds between swallows

Most of the time, the stuck food will pass, but occasionally it must be retrieved endoscopically. If you experience food sticking, try to relax first and don´t eat anything solid. Take only very small sips of water at a time and stay on liquids only for several hours. Drink lukewarm liquids and avoid the extremes of temperatures. If these actions do not resolve your symptoms, please alert your metabolic and bariatric care team.

NAUSEA

Some nausea in the first few months after bariatric surgery is normal, and vomiting can be present sometimes too. However, persistent nausea and vomiting that is preventing oral intake or that is associated with significant abdominal pain, bloating, or the ceasing of passing gas and having bowel movements is NOT normal and you should notify your metabolic and bariatric care team. One of the most common causes of nausea after surgery is dietary non-compliance or indiscretions (Too much, too soon, too fast, or the wrong things). Meats are often problematic for patients, particularly after gastric bypass (RYGB) surgery. Chunky meats and doughy breads can often be trouble foods. Patients often discover through trial and error what foods they have a hard time with and what foods they can eat without issue. Some patients have no dietary intolerances, and occasionally some have a longer list.

Ulcers and gastro-esophageal reflux disease (GERD) can also be a cause of nausea and vomiting after surgery as can narrowing of the sleeve channel or the upper intestinal connections of the RYGB or SADI-S. Ulcers and these narrowings (called strictures) are best identified and treated endoscopically. Acid reducing medications can be helpful in relieving the symptoms of GERD and ulcers, but strictures generally need to be stretched (dilated).

DUMPING SYNDROME

Dumping symptoms can happen after any weight loss operation, but they are most common after the RYGB and come in early and late phases. Symptoms are most commonly triggered by foods high in sugars or simple carbohydrates, fatty foods, and foods/liquids at the extremes of temperature. Early dumping happens within 30-60 minutes of eating and can include (but are not limited to) things such as:

- Nausea and vomiting after eating
- Abdominal pain/cramping
- Sweating
- Dizziness/lightheadedness
- Heart racing
- Extreme fatigue after eating

Late dumping symptoms, which are caused by fluctuations in blood sugar and come on within hours of eating can include:

- Heart racing
- Fatigue
- Difficulty concentrating
- Feelings of hunger
- Shakiness
- Syncope (passing out)
- Sweating/Flushing

Dumping symptoms are usually managed with dietary and behavioral changes such as:

- Chewing your food well and eat slowly
- Limiting sugars and simple carbohydrates
- Avoidance of high fat foods
- Separating eating and drinking by 30 minutes
- Avoiding foods/liquids at the extremes of temperature.

WHEN TO CALL YOUR SURGEON

Call the office 570-523-3290 (during business hours) or Evangelical Community Hospital (after business hours) at 570-524-2000 immediately if you experience

- Fever over 101
- Increasing redness, swelling, and or pus-like drainage from your wounds
- Significant chest pain and/or shortness of breath. If sudden onset or severe you may need to call 911. This can represent a blood clot in the lungs or heart attack.
- Heart rate >110 or feelings of heart racing
- Persistent or worsening nausea, vomiting, or abdominal pain (not relieved by medication or preventing fluid intake for a day)
- Vomiting blood or stools that are maroon or frankly bloody
- Pain, redness, or swelling in your calves or legs

FOLLOW-UP SCHEDULE

Patient Clinic Schedule	Visit Purpose	Action Plan
7-14 days post-op	• Incisional check • Identify early complications • Evaluate hydration and dietary tolerance	• Increase activity • Review dietary progression to Stage 2a diet • Start MVI and B12 • Follow up with primary care provider or Endocrinology
4 weeks post-op	• Identify potential complications • Assess activity levels/exercise routine • Identify any dietary intolerance issues	• Increase exercise/activity • Review dietary progression to Stage 2b • Review importance of support groups and continued behavioral modification • Review self-advancement to stage 3 diet at six weeks
3-4 months post-op	• Identify potential complications or dietary problems • Assess activity levels/exercise routine • Assess weight loss •Assess comorbidity improvement/ resolution	• Review of advancement to Stage 4 diet • Encourage continued exercise and behavioral modification
6 months post-op	• Laboratory assessment • Identify late complications • Identify concerns regarding weight loss curve	• Review nutritional concerns and behavioral modifications • Continue regular exercise regimen
One-year post-op	• Assess weight loss curve • Identify issues potentially impacting weight loss • Consider adjunctive medical treatment if indicated	• Review nutritional concerns and behavioral modifications • Continue regular exercise regimen • Recommend annual follow up with primary care provider
Yearly	• Assess stability of weight • Assess nutritional and exercise habits • Consider adjunctive medical treatment if indicated	• Review nutritional concerns and behavioral modifications • Continue regular exercise regimen • Recommend annual follow up with primary care provider

Laboratory evaluation is performed every 6 months during the first year after surgery, and annually thereafter if labs have not been obtained by the patient´s PCP. A review of systems and laboratory screening to identify symptoms of micronutrient deficiency includes CBC, CMP, TSH, PTH, Hgb A1C, thiamine, B12, folate, iron, vitamin D, calcium, vitamins A, E, and K, zinc, and copper.

IMPORTANT CONSIDERATIONS

Please contact the Metabolic and Bariatric Surgery Clinic at 570-523-3290 or via MyChart messaging prior to presenting to any Emergency Department (ED) in the first 90 days after surgery. This allows us to keep track of any surgery related problem and can help make your care in the ED more efficient. If you need to go to the ED in the first 90 days after surgery, you are strongly encouraged to present back to the ED at Evangelical Community Hospital for continuity of care after your surgery. Anytime you present to another facility with a problem related to your surgical procedure, it is very important that you contact the Metabolic and Bariatric Surgery Clinic by phone or by MyChart. Your care team needs to be aware of any complications related to your surgery.

VITAMIN DEFICIENCIES AFTER SURGERY

Vitamin and mineral deficiencies can occur after ANY metabolic or bariatric procedure. Some patients will have deficiencies before surgery and many others will develop them after surgery. They are particularly common after malabsorptive procedures such as a biliopancreatic diversion with duodenal switch or SADI-S and combination procedures such as the RYGB due to the orally ingested nutrients "bypassing" the portion of the small intestine where the absorption of some vitamins and minerals predominantly takes place. The risk of deficiencies can also be influenced by a patient's dietary habits, food intolerances, or excessive vomiting.

VITAMIN SUPPLEMENTATION

After bariatric surgery you will be at risk for several vitamin and mineral deficiencies and **lifelong** vitamin supplementation and monitoring is essential for your health over the long-term and for avoidance of significant complications including neuropathy, encephalopathy, and osteoporosis to name a few. In the first few weeks after surgery, chewable vitamins are generally the easiest to ingest; however, pills are perfectly acceptable beyond that time if you prefer. You should try to avoid supplemental vitamins that contain sugar. Please make sure your multivitamin meets the recommended doses of micronutrients as listed on the next page. If you have no history of kidney stones you will also take supplemental calcium. This will start about 4 weeks after surgery and the dosage is 1200-1500 mg of calcium daily.

All patients who have had bariatric or metabolic surgery are at risk for B12 deficiency and are required to take lifelong B12 supplementation of 350-500 mcg daily. This can be in the form of injections done every 1-3 months or daily sub-lingual (under the tongue) administration.

If you have had a SADI-S you generally need higher doses of supplements and need to ADDITIONALLY supplement vitamins A, D, E, and K (ADEK's). This is vitally important and lifelong follow up and supplementation are particularly crucial in these instances.

In summary, ALL patients after metabolic and bariatric surgery will be required to take a multivitamin with iron (2 tablets daily), daily sublingual B12 supplementation 350-500 mcg, and most patients will also take 1200-1500 mg of calcium daily. Higher doses of supplementation and additional vitamins (ADEK's) are required in patients who have had a BPD/DS or SADI-S. Please make sure your multivitamin meets the dosage recommendations for the vitamins listed on the next page.

WHAT VITAMINS DO I NEED TO SUPPLEMENT AND PREVENT DEFICIENCIES?

These are the recommended doses of micronutrients necessary to prevent deficiency. If a deficiency is noted different dosing will be necessary. Many of these vitamins and minerals are included in appropriate post-bariatric multivitamins. Please check that what is included in your multivitamin meets the requirements. Recommended doses are **DAILY** unless otherwise specified.

Procedures & Micronutrient Supplements	Laparoscopic sleeve gastrectomy (LSG)	Roux-en-Y gastric bypass (RYGB)	Single- anastomosis duodeno-ileostomy with sleeve (SADI-S)	Biliopancreatic diversion with duodenal switch (BPD/DS)
Vitamin D3	At least 3,000 IU (75 mcg) Maintain 25-hydroxyvitaminD level > 40 ng/mL	At least 3,000 IU (75 mcg) Maintain 25-hydroxyvitaminD level > 40 ng/mL	At least 3,000 IU (75 mcg) Maintain 25-hydroxyvitaminD level > 40 ng/mL	At least 3,000 IU (75 mcg) Maintain 25-hydroxyvitaminD level > 40 ng/mL
Vitamin A	5,000-10,000 IU	5,000-10,000 IU	10,000 IU	10,000 IU
Vitamin E	15 mg	15 mg	15 mg	15 mg
Vitamin K	90-120 mcg	90-120 mcg	300 mcg	300 mcg
Thiamine (Vitamin B1)	At least 12 mg	At least 12 mg	At least 12 mg	At least 12 mg
Vitamin B12	350-500 mcg sublingual liquid or tablet, or nasal 1000 mcg monthly injection	350-500 mcg sublingual liquid or tablet, or nasal 1000 mcg monthly injection	350-500 mcg sublingual liquid or tablet, or nasal 1000 mcg monthly injection	350-500 mcg sublingual liquid or tablet, or nasal 1000 mcg monthly injection
Folate (Vitamin B9)	400-800 mcg 800-1000 mcg for females of childbearing age	400-800 mcg 800-1000 mcg for females of childbearing age	400-800 mcg 800-1000 mcg for females of childbearing age	400-800 mcg 800-1000 mcg for females of childbearing age
Iron*	At least 45-60 mg	At least 45-60 mg	At least 45-60 mg	At least 45-60 mg
Zinc	8-11 mg	8-22 mg	16-22 mg	16-22 mg
Copper	1 mg	2 mg	2 mg	2 mg
Calcium citrate	1200-1500 mg	1200-1500 mg	1800-2400 mg	1800-2400 mg

** Taking iron with foods or taking smaller doses twice daily or three times daily limits GI distress. Taking vitamin C with iron increases absorption. Foods containing high amounts of calcium decrease absorption.*

In addition to these listed micronutrients, it is recommended that your multiple vitamin mineral supplement contain trace minerals, including selenium and magnesium, and that you consume 100-200% of the daily value of all B vitamins or an optional B complex daily.

MEDICATIONS TO AVOID

After RYGB or SADI-S, it is important to avoid the use of non-steroidal anti-inflammatory medications such as Ibuprofen, Motrin, Aleve, etc. as these medications can lead to the increased risk of ulcerations. In general, regular use of these medications should be avoided in all patients because of potential stomach complications.

EXERCISE

Getting started on a physical activity and exercise plan is a very important part of the bariatric program both before and after surgery. Physical activity is defined as activity **in addition** to your normal daily activities and is essential to maximize weight loss, maintain weight loss, and achieve all the health benefits possible from metabolic and bariatric surgery. We are happy to help guide and encourage you to find an exercise program that is right for you.

Exercise has many health benefits in both the short and the long-term including:

- o Improved sleep quality
- o Reduced anxiety levels
- o Reduction in blood pressure
- o Reduction in the risk of dementia
- o Improved psychological health and well-being
- o Lowered risk of heart disease, stroke, and type 2 diabetes
- o Lowered cancer risk: bladder, breast, colon, endometrium, esophagus, kidney, lung, stomach
- o Reduced risk of weight gain
- o Improvement in bone strength
- o Improvement balance and coordination
- o Slowing of the aging process
- o Improved immune function
- o Increased life expectancy

RAMPING UP FREQUENCY AND DURATION GOALS

The expectation of our program is to include 30 minutes of activity 4-5 days per week during the preoperative portion of the program. This may have to be broken up into smaller pieces throughout the day (i.e., 10 minutes three times per day instead of 30 minutes at once) to reach the goal at the beginning, but you should be working toward being able to perform 30 minutes of continuous cardiovascular exercise per day. Gradually increasing the intensity and the amount of physical activity will be beneficial for overall success. The CDC recommendation for adults is 150 minutes of moderate-intensity physical activity and 2 days of muscle strengthening each week. This is a goal we encourage participants to work toward.

In addition to a defined exercise plan, challenge yourself to make small changes to increase your general daily activity. Examples would include using stairs instead of an elevator, parking at a distant parking spot, taking a walk after eating a meal, and doing an activity during commercials if watching TV. When you start to incorporate small changes, you develop an awareness of ways to increase your overall physical activity level.

When you begin to increase your activity level, you may feel out of breath for the first few minutes. Do not be discouraged by this temporary discomfort as this is normal and necessary to improve your fitness. As your body compensates, breathing becomes more regular and your heart rate settles into a comfortable, elevated rate within about 10 minutes of starting.

WARM UP, COOL DOWN, STRETCH

Every workout should begin with a warm-up. Muscles that are warmed up and stretched are less prone to injury. A warm-up should be 5-10 minutes. During the warm-up, the body temperature, heart rate, respiratory rate, and blood pressure will increase to meet the demand of the physical activity. Some examples of warm-up activities include arm circles, arm swings, and marching in place.

Cooling down after a workout is also important. When you exercise, your heart beats faster to supply muscles with blood and oxygen. If exercise is stopped abruptly, a sudden decrease in blood pressure and heart rate can cause lightheadedness. A gradual cool down allows the body to adjust in a stable manner. To cool down, decrease the intensity of your exercise for 5-10 minutes. Also, doing some stretching exercises will help with flexibility and prevent sore and tight muscles.

Proper stretching technique:

1. Slowly stretch into position until you feel a tightness in the muscle.
2. Hold that position for 10-30 seconds until you feel some tension in the muscle, but not to the point of pain or a burning sensation. The stretch can be held longer, up to 60 seconds.
3. Release the stretch and wait 3-5 seconds. Then repeat the stretch again for a total of 3-5 times, or more if the muscle feels tight.

Stretching several times a week can also reduce stress and improve overall flexibility and range of motion.

AEROBIC AND STRENGTH EXERCISE

Aerobic activity, sometimes referred to as "cardio," demands breathing harder and increasing heart rate to meet the need of muscles for increased oxygen. As a beginner, you may be starting with as little as 5-10 minutes of aerobic exercise at a time, and you will still gain health benefits from your effort. Gradually adding time and intensity to your aerobic exercise plan will condition your body, and you will start to develop additional endurance.

Intensity describes how hard the physical activity is. Moderate-intensity aerobic exercise increases your heart rate, and you "break a sweat." One way to determine that an activity is moderate level is that you will be able to talk while performing the activity. If the intensity level of the aerobic exercise is vigorous, you won't be able to say more than a few words without pausing to breathe.

The advantage of choosing a vigorous-intensity aerobic activity is that one minute of vigorous activity gives about the same benefit of 2 minutes of moderate-intensity aerobic activity. Advancing to vigorous activity should only occur after moderate-level activity feels comfortable. You will know that you are in this zone of intensity if you can only speak a short sentence without stopping. A lot of benefit can come from performing intervals of high/vigorous intensity "work" periods interspersed with low to moderate intensity "rest" periods.

Interval training in this way has the same metabolic adaptation to stress in a shorter period of time than training much longer in the low to moderate intensity zone achieves and can be a potent stimulant to your metabolism.

Aerobic activities strengthen your heart. For an activity to be considered "aerobic," it must be performed at an intensity that makes your heart work harder than it normally does. The intensity of an activity can also be estimated using your heart rate. A heart rate is the number of beats of the heart over one minute.

To check your heart rate, feel your pulse inside your wrist in line with the thumb. Place the tips of the index and middle fingers over the radial artery pressing lightly. Count the pulsations for 60 seconds or count for 30 seconds and multiply by two. An alternate location to feel a pulse would be on your neck under the jaw. Some watches also provide a heart rate for convenient monitoring.

CALCULATING YOUR MAXIMUM HEART RATE

Calculate your maximum heart rate (based on age) in the space provided. Subtract your age in years from 220 to estimate your maximum heart rate. This is a formula to estimate your maximum heart rate. Your true maximum heart rate may be slightly above or below this number and sometimes affected by medications such as beta-blockers.

220 - _____ = _____ maximum heart rate (for age)

Calculate the target heart rate range for aerobic exercise in the space provided. Multiply your maximum heart rate (from above) by 64% to find the lower goal and by 93% for the upper limit.

_____ X .64 = _____ beats/minute

_____ X .93 = _____ beats/minute

These two numbers are the target range for your heart rate recommended by the CDC for moderate-intensity to vigorous-intensity physical activity. When exercising, you may need to stop briefly to check your heart rate to determine that you are reaching and maintaining the target heart rate zone unless you have a heart-rate monitor.

For the best heart-strengthening effects, your heart rate during an aerobic activity should be within this range. If your heart rate is below the lowest number, increase your effort to achieve at least the low target heart rate.

Exercising continuously for 30 minutes at least 4-5 days per week is the best way to improve your heart fitness. Exercising longer (30-60 minutes) is more helpful for weight reduction. As you participate in aerobic exercise, remember this is also optimizing your cardiac health in preparation for anesthesia and your weight loss surgery.

STRENGTH TRAINING

The recommendation of including at least 2 days of muscle strengthening activities should also be a goal of participants. Examples of muscle strengthening activities include lifting weights, resistance bands, sit-ups, push-ups, and some forms of yoga. These activities work major muscle groups. The goal is to fatigue the muscle to the point of an additional repetition of the activity being hard.

An example for lifting a weight is to choose a weight that allows you to do 8-12 repetitions per activity. This is called a "set." As your muscle strength improves, increase activity to 2 or 3 sets. If the weight allows you to do more than 8-12 repetitions, consider increasing the weight. As you become stronger, consider alternative exercises that will meet the challenge of your improving muscle strength.

CHOOSING/MAKING YOUR PLAN

When considering your exercise plan, **choose an activity you enjoy**. It is not necessary to spend a lot of money to have a good outcome. **DON'T MAKE EXCUSES** for a lack of exercise. Start from where you are and celebrate small victories and improvements. Even if you cannot do everything another person can as far as exercise, find something you **CAN** do and start doing it. Overcome perceived barriers.

The internet can be a good overall source for endless information and inspiration. There are also streaming services available for workouts and exercise programs.

A good source our team would recommend is the website https://www.acefitness.org/resources/everyone/exercise-library/. It offers an exercise library and examples for beginner, intermediate, and advanced levels. The site also has recipes, tools, calculators, and a healthy living blog. These can be helpful for inspiration and can help with incorporating healthy lifestyle behaviors.

GOAL SETTING AND SUCCESSFUL STRATEGIES

- Technology using tracking devices, watches, and APPs can measure and motivate progress.
- Goals should be specific and include frequency and duration. A good example might be "I want to walk 4 times this week for 15 minutes each time."
- Goals should include completion date or time frame. Consider weekly or monthly time frames.
- Goals should be achievable. Setting realistic goals allows for success and completion. Each successful goal can be motivating.
- Schedule workouts as part of your day. This will help to make exercise a priority instead of an afterthought at the end of the day.
- Journaling progress can be very motivating to recognize how you are advancing in strength, endurance, and conditioning.
- Try to engage in a variety of activities to avoid boredom. Even an activity that you enjoy can become boring. Consider alternative activities, especially as you advance in your conditioning. It can be very rewarding and empowering to accomplish an activity that you would not have done previously.
- **Consider a workout buddy or exercise/fitness classes**. Having a commitment to another person will help in keeping you accountable when you might otherwise opt out of your planned activity.
- Focus on the long-term outcome, not a change in weight.
- Reward yourself! When you have completed a goal, consider a non-food reward. You earned it!

NUTRITION AND EXERCISE GOALS TO ACHIEVE BEFORE SURGERY

Your motivation and accomplishment of your goals will keep you on target with your pathway to surgery.

	GOAL	Plan/Action/Comments
1	Achieve a weight goal of _____ prior to surgery	
2	Plan your meals • Eat 4-6 small, measured and planned meals/snacks daily • Use smaller plates/utensils • Eat protein with meals/snacks and be able to identify more than 5 protein sources • Eat 5 or more servings of fruits and vegetables per day	
3	Keep food and activity records and hunger rating scale; bring records to nutrition appointments	
4	Avoid as your staple/everyday foods: • Concentrated sweets: sugars, desserts, sweetened beverages • Fried and high fat foods	
5	Exercise at least 4 times per week for 30 minutes continuously	
6	Take supplements: • Multivitamin/mineral with iron-chewable, 2 per day • Calcium citrate, chewable, 2 daily for total of 1200-1500 mg • Vitamin B12 sublingual, one daily for 350-500 mcg • Vitamin D-3-liquid or gel cap, total of 3000 IU per day	
7	Drink 64 oz of fluid per day; separate eating and drinking by 30 minutes	
8	Practice mindful eating: • Eat slowly and purposely without distractions • Chew food until pureed/applesauce consistency	
9	Avoid: • Caffeine • Alcohol • Carbonated Beverages • Straws	

STAGE 1 DIET (Clear/Thin Liquid)

Begin	Day of Surgery
Intake Goal	Fluid goal: minimum of 32 ounces per day to prevent dehydration
Supplement	None
FYI	• Take slow, small sips • Consume 1/2 cup every 1-2 hours as tolerated • If you feel full, stop eating or drinking • Your stomach can hold about 2-4 oz • Avoid carbonated beverages and straws to prevent extra gas/air in your pouch or stomach • Avoid added sugar to prevent dumping syndrome
Sample Menu	8 am: 4 oz sugar free (SF) gelatin 9 am: 1/2 cup (4 oz.) water 10 am: 1/2 cup (4 oz.) SF drink (flavored water, diluted) 11 am: 1/2 cup (4 oz.) SF drink 12 pm: 4 oz SF gelatin 2 pm: 1/2 cup (4 oz) SF drink 3 pm: 1/2 cup (4 oz) SF drink 5 pm: 4 oz SF gelatin 8 pm: 1/2 cup (4 oz) SF drink 9 pm: 1/2 cup (4 oz) SF drink
Beverages and Thin Liquids	**Choose diet, 0 calorie:** • Decaffeinated coffee/tea, plain or with artificial sweetener • Water, broth, drink mixes • Gelatin, popsicles
Protein Group: Milk, Meat, or Plant Based	Begin later
Vegetable Group	Begin later
Fruit Group	Begin later
Starch Group	Begin later
Fat Group	Begin later

STAGE 2a DIET (Full Liquid)

Begin	Day of Surgery
Intake Goal	Fluid Goal: 48-64 ounces per day Protein Goal: 60-80 grams per day
Supplement	**Multivitamin/mineral with iron** – chewable – 2 daily **Calcium citrate** – chewable – 2 daily for a total of 1200-1500 mg **Vitamin B12** – sublingual – 1 daily for a total of 350-500 mcg **Vitamin D-3** – liquid or gel cap – for a total of 3,000 IU per day
FYI	• Take slow, small sips • Consume 1/2 cup every 1-2 hours as tolerated • If you feel full, stop eating or drinking • Your stomach can hold about 2-4 oz • Avoid carbonated beverages and straws to prevent extra gas/air in your pouch or stomach • Avoid added sugar to prevent dumping syndrome
Sample Menu	8 am: 1/2 cup (4 oz) protein drink 9 am: 1/2 cup diet gelatin/SF drink 10 am: 1/2 cup (4 oz) protein drink 11 am: 1/2 cup (4 oz) protein drink 12 pm: 1/2 cup light yogurt 2 pm: 1/2 cup (4 oz) protein drink 3 pm: 1/2 cup (4 oz) protein drink 4pm: 1/2 cup vegetable juice/SF drink 5 pm: 1/2 cup strained cream soup with nonfat milk powder 6 pm: 1/2 cup tomato soup 7 pm: 1/2 cup (4 oz) protein drink 8 pm: 1/2 cup (4 oz) light yogurt
Beverages and Thin Liquids	**Choose diet, 0 calorie:** • Decaffeinated coffee/tea, plain or with artificial sweetener • Water, broth, drink mixes • Gelatin, popsicles
Protein Group: Milk, Meat, or Plant Based	**Choose 2-4 per day:** • 1/2 cup skim or 1% milk (includes low lactose or plant-based milk) • 2 Tbsp nonfat milk powder • 1/2 cup light yogurt or protein-fortified pudding (smooth/pureed texture) **Choose 3-6 per day:** • 1/2 cup protein drink • 1 scoop protein powder • 2 Tbsp nut butter powder

STAGE 2a DIET (Full Liquid)
Continued

Vegetable Group	**Choose 0-2 per day:** • 1/2 cup vegetable juice (V8, tomato, carrot) • 1/2 cup tomato soup
Fruit Group	**Choose 0-2 per day:** **• 1/2 cup diluted, unsweetened fruit juice (1/4 cup juice + 1/4 to 1/2 cup water to prevent dumping syndrome from sugar)**
Starch Group	**Choose 1-2 per day:** • 1/2 cup blended or strained fat free or low-fat cream soup
Fat Group	**Choose 0-2 per day:** • 1 tsp margarine, butter, oil • 2 tsp light margarine

STAGE 2b DIET (Full liquid plus egg and cheese)

Begin	About 3-4 weeks after surgery
Intake Goal	Fluid Goal: 48-64 oz. per day Protein Goal: 60-80 gm per day
Supplement	**Multivitamin/mineral with iron** – chewable – 2 daily **Calcium citrate – chewable** – 2 daily for a total of 1200-1500 mg **Vitamin B12** – sublingual – 1 daily for a total of 350-500 mcg **Vitamin D-3** – liquid or gel cap – for a total of 3,000 IU per day
FYI	• Eat slowly and sip liquids • If you feel full, stop eating • Wait 30 minutes after eating solid food to drink • Avoid alcohol, caffeine, carbonated beverages, and straws
Sample Menu	8 am: 1 egg 9 am: 1/2 cup sugar free gelatin 10 am: 1/2 cup (4 oz) protein drink 11 am: 1/2 cup (4 oz) protein drink 12 pm: 1/2 cup light yogurt 2 pm: 1/2 cup (4 oz) protein drink 3 pm: 1/2 cup 1% fat cottage cheese 4 pm: 1/2 cup vegetable juice 5 pm: 1/2 cup strained cream soup with nonfat milk powder 6 pm: 1/2 cup tomato soup 7 pm: 1/2 cup (4 oz) protein drink 8 pm: 1/2 cup (4 oz) light yogurt
Beverages and Thin Liquids	**Choose diet, 0 calorie:** • Decaffeinated coffee/tea, plain or with artificial sweetener • Water, broth, drink mixes • Gelatin, popsicles
Protein Group: Milk, Meat, or Plant Based	**Choose 2-4 per day:** • 1/2 cup skim or 1% milk (includes low lactose or plant-based milk) • 2 Tbsp nonfat milk powder • 1/2 cup light yogurt or protein-fortified pudding (smooth/pureed texture) **Choose 3-6 per day:** • 1 egg or 1/4 cup egg substitute • 1/2 cup protein drink • 1 scoop protein powder • 2 Tbsp nut butter powder • 1-oz shredded low fat cheese • 1/4 cup low fat cottage cheese, ricotta cheese, or tofu

STAGE 2a DIET (Full Liquid) plus egg and cheese) continued

Vegetable Group	**Choose 0-2 per day:** • 1/2 cup vegetable juice (V8, tomato, carrot) • 1/2 cup tomato soup
Fruit Group	**Choose 0-2 per day:** **• 1/2 cup diluted, unsweetened fruit juice (1/4 cup juice + 1/4 to 1/2 cup water to prevent dumping syndrome from sugar)**
Starch Group	**Choose 1-2 per day:** • 1/2 cup blended or strained fat free or low-fat cream soup
Fat Group	**Choose 0-2 per day:** • 1 tsp margarine, butter, oil • 2 tsp light margarine

STAGE 3 DIET (Soft Texture)

Begin	About 6 weeks after surgery
Intake Goal	Fluid Goal: 48-64 oz. per day Protein Goal: 60-80 gm per day
Supplement	**Multivitamin/mineral with iron** – chewable – 2 daily **Calcium citrate** – chewable – 2 daily for a total of 1200-1500 mg **Vitamin B12** – sublingual – 1 daily for a total of 350-500 mcg **Vitamin D-3** – liquid or gel cap – for a total of 3,000 IU per day
FYI	• Eat high protein foods first • Introduce new foods one at a time; take small bites and chew well • Keep portions small: 6 small meals/snacks per day • Avoid alcohol, caffeine, carbonated beverages, and straws • Wait 30 minutes after eating solid food to drink • Learn signals of your stomach fullness; STOP eating before you are overly full or nauseous • Choose whole foods for satiety
Sample Menu	B: 1 protein, 1/2 starch, 1/2 fruit S: 2 proteins, 1/2 veg L: 1 protein, 1/2 starch, 1 fat S: 1 meat, 1/2 veg, 1/2 fruit D: 2 proteins, 1/2 starch, 1/2 veg, 1 fat S: 1 protein, 1/2 starch
Beverages and Thin Liquids	**Choose diet, 0 calorie:** • Decaffeinated coffee/tea, plain or with artificial sweetener • Water, broth, drink mixes • Gelatin, popsicles

STAGE 3 DIET (Soft Texture)
continued

Protein Group: Milk, Meat, or Plant Based	**Choose 2-4 per day:** • 1/2 cup skim or 1% milk (includes low lactose or plant-based milk) • 2 Tbsp nonfat milk powder • 1/2 cup light yogurt **Choose 3-6 per day:** • 1 egg or 1/4 cup egg substitute • 1 Tbsp smooth peanut butter • 2 Tbsp nut butter powder • 1/2 cup protein drink • 1 scoop protein powder • 1 oz fish • 1 oz ground lean beef, turkey, chicken, pork, or veal • 1 oz low fat cheese • 1/2 cup cooked beans • 1/3 cup hummus • 1/4 cup low fat cottage cheese, ricotta cheese, or tofu
Vegetable Group	**Choose 0-2 per day:** • 1/2 cup vegetable juice (V8, tomato, carrot) • 1/2 cup tomato soup • 1/2 cup cooked vegetables
Fruit Group	**Choose 2 per day:** **• 1/2 cup diluted, unsweetened fruit juice (1/4 cup juice + 1/4 to 1/2 cup water to prevent dumping syndrome from sugar)** **• 1/2 cup unsweetened cooked, canned, or defrosted fruit**
Starch Group	**Choose 3 per day:** • 1/2 cup cooked, thinned cereal (oatmeal, cream of wheat/rice) • 1/2 cup low fat soup
Fat Group	**Choose 2 per day:** • 1 tsp margarine, butter, oil • 2 tsp light margarine • 1 tbsp low fat mayonnaise, salad dressing, or gravy

STAGE 4 DIET (Regular Texture)

Begin	About 10-15 weeks after surgery
Intake Goal	Fluid Goal: 48-64 oz. per day Protein Goal: 60-80 gm per day
Supplement	**Multivitamin/mineral with iron** – chewable – 2 daily **Calcium citrate** – chewable – 2 daily for a total of 1200-1500 mg **Vitamin B12** – sublingual – 1 daily for a total of 350-500 mcg **Vitamin D-3** – liquid or gel cap – for a total of 3,000 IU per day
FYI	• Eat high protein foods first • Introduce new foods one at a time; take small bites and chew well • Keep portions small: 6 small meals/snacks per day • Avoid alcohol, caffeine, carbonated beverages, and straws • Wait 30 minutes after eating solid food to drink • Learn signals of your stomach fullness; STOP eating before you are overly full or nauseous • Choose whole foods for satiety
Sample Menu	B: 1 protein, 1 starch, 1 fruit S: 1 protein, 1 fruit L: 2 proteins, 1 starch, 1 veg, 1 fat S: 2 proteins, 1 fruit D: 2 proteins, 1 starch, 1 veg, 1 fat S: 1 protein, 1 veg
Beverages and Thin Liquids	**Choose diet, 0 calorie:** • Decaffeinated coffee/tea, plain or with artificial sweetener • Water, broth, drink mixes • Gelatin, popsicles

STAGE 4 DIET (Regular Texture)
continued

Protein Group: Milk, Meat, or Plant Based	**Choose 2-4 per day:** • 1/2 cup skim or 1% milk (includes low lactose or plant-based milk) • 2 Tbsp nonfat milk powder • 1/2 cup light yogurt **Choose 6-9 per day:** • 1 egg or 1/4 cup egg substitute • 1 Tbsp peanut butter • 2 Tbsp nut butter powder • 1/2 cup protein drink • 1 scoop protein powder • 1 oz fish • 1 oz lean beef, turkey, chicken, pork, or veal • 1 oz low fat cheese • 1/2 cup cooked beans • 1/3 cup hummus • 1/4 cup low fat cottage cheese, ricotta cheese, or tofu
Vegetable Group	**Choose 2 per day:** • 1/2 cup vegetable juice (V8, tomato, carrot) • 1/2 cup tomato soup • 1/2 cup cooked vegetables • 1/2 cup raw vegetables
Fruit Group	**Choose 2-3 per day:** **• 1/2 cup diluted, unsweetened fruit juice (1/4 cup juice + 1/4 to 1/2 cup water)** **• 1/2 cup unsweetened cooked, canned, or defrosted fruit** **• 1/2 raw fruit**
Starch Group	**Choose 2-3 per day:** • 1/2 cup whole grain hot cereal • 3/4 cup unsweetened dry cereal • 1/2 cup low fat soup • 5 whole wheat crackers • 1/2 cup corn, peas, or potatoes • 1/3 cup whole grain pasta or brown rice • 1 slice whole grain bread/toast
Fat Group	**Choose -2-3 per day:** • 1 tsp margarine, butter, oil • 2 tsp light margarine • 1 Tbsp low fat mayonnaise, salad dressing, or gravy

NOTES