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1. Welcome to the Weight Loss Surgery Program

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- A Message from our Medical Staff
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The Decision

Our surgeons work with multi-specialty, full-time support staff that is dedicated to providing the best experience possible for the entire surgical process. Our team works with patients to ensure they receive the best care before, during, and after their surgery. Our commitment to you is to provide life-long follow up care. Weight loss surgery requires serious consideration and commitment. Patients need to be aware of and have a fundamental understanding of all aspects of this surgery. All facets of your life, body, mind and spirit - will potentially undergo significant change. We will provide support and direction to help you be successful through your weight loss journey. The successful patient will not only lose weight but will also have significant improvement in many of their current medical problems and en-joy a better quality of life. To provide ongoing support, we host monthly support group meetings for patients who have had surgery and those interest-ed in weight loss surgery at our different sites. A list of support groups can be found on our website. Potential patients, past and current patients, family, and friends are always welcome. This book is designed to guide you through our program. Please call us with any questions at 216.445.2224.

Cleveland Clinic Bariatric and Metabolic Institute (BMI)

Welcome to the Cleveland Clinic Bariatric and Metabolic Institute.

We strive to set the standards for quality in the field of bariatric (weight loss) surgery and total patient satisfaction. Our multidisciplinary team is comprised of professionals committed to your care as we assist you through your surgical weight loss journey Bariatric Surgery Excellence The Cleveland Clinic BMI is devoted to providing world-class care. We meet or exceed the following standards for excellence in weight loss surgery recommended by the American College of Surgeons and the American Society of Metabolic and Bariatric Surgery:

- Multidisciplinary expertise in the following obesity associated specialties:
  - Endocrinology
  - Cardiology
  - Gastroenterology
  - Psychology/Psychiatry
  - Critical Care
  - Nutrition/Dietary
  - Physical Therapy/ Exercise Therapy
  - Pulmonary Medicine (Sleep Apnea)
- Designated nurse or physician extenders for care and education
- Full line of equipment and instruments for the care of bariatric surgical patients
- Dedicated inpatient unit with suitable furniture and medical equipment
- Dedicated outpatient clinic with suitable furniture and medical equipment
- Perioperative care standardized with utilization of clinical pathways
- Availability of organized and supervised support groups
- Long-term follow-up care with a system for outcomes reporting

Surgeon Qualifications and Credentialing

Our pursuit of world-class care at the Cleveland Clinic BMI begins with the leadership, skill and experience of our surgeons. Our surgeons meet the highest standard of qualifications and credentialing for bariatric surgery and have performed thousands of bariatric operations. They are nationally recognized leaders in bariatric surgery and have taught surgeons from around the world. Our surgeons are active members of the American Society of Metabolic and Bariatric Surgery and specialize in providing a range of weight loss surgery procedures that set the benchmark in bariatric surgery programs worldwide. We emphasize minimally invasive or laparoscopic surgery for nearly all bariatric operations performed at Cleveland Clinic. Qualifications that all our surgeons meet include the following:

- Graduation from approved medical school
- Completion of accredited residency training in general surgery
- Completion of fellowship training in advanced laparoscopic surgery and bariatric surgery
- Membership in the American Society of Metabolic and Bariatric Surgery
- Experience of at least 100 bariatric operations

Message from the Staff

Many people do not realize the profound effect severe obesity has on the mind and body. The severely obese face health, social, and psychological problems that are not recognized by our society. Obesity is not caused by a lack of willpower as is commonly believed. The difficulties faced in everyday life are often not appreciated. Tasks such as getting in and out of cars, simple daily hygiene, even tying your shoelaces all become challenging.

Living with obesity can be overwhelming, especially when considering the serious and sometimes life-threatening health risks that are caused by obesity. Obesity is strongly associated with high blood pressure, infertility, arthritis, diabetes, heart and lung disease, and a shortened life span.

Obesity can severely affect the quality of your life! It is a disease that is so powerful that you alone cannot cure it. Just like any other disease, obesity needs intervention and should not be ignored. It is no one's fault that he or she is obese. Many of you have probably struggled with why you are obese and feel defeated by your inability to change your weight. But no matter how many diets you try, diets often have a minimal and short-term impact on weight loss. Statistics show that with non-surgical diet plans, 95 percent of people will regain their weight. The only proven long-term solution to obesity and its related illnesses is weight loss surgery.

Surgery, despite its modest risks, can drastically improve your life. You can have control and make decisions toward a healthier future. We offer minimally invasive surgical options using the most advanced techniques for permanently treating obesity and its related complications.

You will probably have some questions about the surgery. This patient information guide will begin your journey to understanding the role of weight loss surgery. Most importantly, it will prepare you for what to expect before and after your surgery. We look forward to answering any questions you may have and welcome you to our program.

The Medical Staff of the Bariatric and Metabolic Institute

MBSAQIP®

METABOLIC AND BARIATRIC SURGERY ACCREDITATION AND QUALITY IMPROVEMENT PROGRAM

The Cleveland Clinic Bariatric and Metabolic Institute (BMI) is accredited by the Metabolic and Bariatric Surgery Accreditation and Quality Improvement program (MBSAQIP).

The designation awarded to programs by the American Society for Metabolic and Bariatric Surgery and The American College of Surgeons to programs with a proven record of favorable outcomes for weight-loss surgery. We are honored and gratified to have earned the designation as an accredited center. The prevalence of obesity in our country has risen to an alarming level. It is a disease often accompanied by a number of other grave medical problems. Cleveland Clinic is dedicated to addressing obesity not only as a health problem for individuals, but also as a national health issue.

2. Step by Step

› Flow Sheet Weight Management Center

Flow Sheet Weight Management Center

STEP 1:

Register for a Free Weight Loss Surgery Informational Seminar

ONLINE SEMINAR:

Our online seminar provides the same information patients receive at the In-Person Seminar, however it is available for you to complete at your convenience.

Once you've watched the presentation, you will be asked a series of questions to ensure you have understood the material provided. If you have questions after taking the Online Seminar, they can be addressed at the time of your consult.

IN-PERSON SEMINAR:

Our in-person seminars are held several times a month in various Cleveland Clinic Health Centers as well as Main Campus. At the seminar, you will listen to a program representative as they describe morbid obesity and the surgical options used to treat this disease. There will be time at the end for questions and answers. The seminar is designed to provide you with all the information needed to make an informed decision about weight loss surgery. You are encouraged to bring a support person with you to this seminar.

STEP 2:

Complete the On-Line or Paper Health Questionnaire

Please complete the questionnaire as thoroughly and accurately as possible. This information is very important and required by most insurance companies to qualify you for weight loss surgery.

Completing this information online will help expedite your consult. All information will be kept confidential.

STEP 3:

Verification of Insurance and Financing

While it is not a mandatory step in the Pathway process, we always recommend you confirm that your health insurance allows you to come to the Cleveland Clinic.

If you plan to go through your health insurance for coverage of surgery, we will verify your benefits for you. We will communicate to you both your benefits and any specific criteria which must be met for your insurance plan to cover surgery. Please see the **Insurance and Financing** section of our website for more detailed information. Ask your insurance company if the following procedures are covered at the Cleveland Clinic by your insurance plan.

- Roux-en-Y gastric bypass (CPT Code 43644)
- Sleeve gastrectomy (CPT Code 43775)

The Cleveland Clinic accepts all major insurance carriers including Medicare and Medicaid.

A VERY IMPORTANT NOTE: Most insurance companies require the following:

- medical documentation of a weight history.
- any actual documentation of diet drugs and medically supervised diets prescribed.

If you have a weight history and weight treatment history at the Cleveland Clinic, we will gather that weight information and weight loss drugs prescribed by Cleveland Clinic doctors from your Cleveland Clinic medical record. For weight history outside the Cleveland Clinic or its satellite offices you will need to contact the doctor who weighed you and/or prescribed weight loss drugs for a copy of that documentation. Copies of the doctor's office notes detailing your weight loss attempts may be required. The weight loss attempts must note weight loss or gain for the visit, the diet they have you following and a review of your exercise for the month.

If you plan to self pay, please contact 1.800.339.9829 directly to set up your consultation.

STEP 4:

Medical Consultations and Assessments

After your insurance coverage has been verified, your Initial Patient Worksheet Questionnaire will be evaluated by our staff to determine if you qualify for weight loss surgery according to the National Institutes of Health guidelines. In addition, other medical problems may be revealed, which could require evaluation by our specialists.

- You will receive a welcome letter and a patient tracker for your progress.
- You will receive a phone call to scheduled appointments as well as a mailed appointment reminder and a phone call three days before your appointments.

If these appointments cannot be kept, please call the program office at 216.445.3030.

If you do not meet the criteria for weight loss surgery you will be contacted to discuss non-surgical options. Or you can learn more by going to the Cleveland clinic weight management website at:

https://my.clevelandclinic.org/landing/weight-management

At these office appointments, the medical staff will review your history and examine you briefly. You will have an opportunity to discuss surgical weight loss options with your surgeon and ask questions. At the conclusion of your visit you will receive a "Patient Tracker". The Tracker includes a list of diagnostic tests and consultations that you will be needed to complete before proceeding with surgery.

Please note that all patients are required to have a nutritional and psychological

evaluation done at the Cleveland Clinic. The need for other consultations and evaluations will be determined by your medical history, physical exam and our discussion with you. You will be provided with the names and phone numbers of consultants and testing areas so that you can make appointments that will be convenient for you.

These clearances and assessments are broken down into 4 areas you will need to be cleared in order to proceed. These are:

1. Surgery Consult
2. Medical Evaluation
3. Psychological Evaluation
4. Nutritional Evaluation

When you have completed all visits please call 216.445.2224 Option 5.

We can use test results, consultations and other records of treatment performed outside the Cleveland Clinic, if and will request they be faxed to the number below for upload into your medical record. Any testing completed at the Cleveland Clinic main campus or Cleveland Clinic satellite offices (Family Health Centers) are available to us.

When all testing and evaluation is complete, copies of outside (non-CCF) testing results, evaluations and other documents should be sent to our program office. Mail to:

Cleveland Clinic Bariatric and Metabolic Institute (BMI) ATTN: Anne Tyson-Sabir 9500 Euclid Ave., M61 Cleveland OH 44195

Or FAX to 216.636.1276

STEP 5:

Surgical Pre-certification Insurance Approval

ALL MEDICAL CLEARANCES AND TESTS MUST BE COMPLETED BEFORE WE CAN SUBMIT TO YOUR INSURANCE COMPANY.

Once all of your requirements (testing, consults, psychology, and diet, etc.) for surgery have been completed:

1. Call 216.445.2224 and select option #5.
2. Follow the recorded instructions to initiate insurance approval request.

We will submit a letter of recommendation to your insurance carrier requesting approval for the surgical weight loss procedure. Some insurance companies will make the decision about your surgery within a few weeks. Some insurance carriers take several weeks or months to return a decision. We will contact you when we have heard from your insurance company. You may contact your insurance company to check on the status of your insurance approval. If your insurance company denies the request, our financial counselor will discuss appeals and self-pay options with you.

STEP 6:

Scheduling of Surgery Date and Pre-operative Clinic Visit

Once your insurance approval is obtained, you will be contacted to arrange a pre-operative clinic visit date and a date for surgery. At your pre-operative visit you will meet again with a BMI nurse for pre-operative education. A Nurse Practitioner or Physician will review your testing and complete a history and physical exam. You will also meet privately with your surgeon who will review all aspects of your upcoming surgery.

STEP 7:

The Surgery and Follow-up Visits

In most cases you will be admitted to the hospital the morning of surgery. The actual time you will need to arrive will not be known until the day before surgery. Most surgical weight management patients are in the hospital for 1or 2 days. Most patients return to work approximately 4 weeks after surgery or sooner. There are many more questions that you will have about this step. Many of these questions will be answered during your pre-op visit. We look forward to working with you in reaching and maintaining your health goals. Attendance at the follow up visits is very important. Studies have show that follow up visits are essential to helping you achieve your personal and health goals and will help us evaluate your response to lifestyle changes. The schedule of routine follow-up appointments can be found in the post-op section of this book.

3. Preparing for Weight Loss Surgery

- Defining Obesity
- Am I a Weight Loss Surgery Candidate?
- Weight Loss Surgery Overview
- Results and Benefits of Weight Loss Surgery
- Risks of Weight Loss Surgery

Defining Obesity

Obesity: Causes and Treatments

Obesity is a common problem in the United States. Current research suggests that one in three Americans is obese. In the United States alone, about 300,000 deaths per year can be blamed on obesity.

The disease of obesity has multiple causes. Obesity tends to run in families, suggesting there may be a genetic contribution. However, family members also tend to share the same diet and lifestyle habits. Environment also plays a role in obesity. These environmental factors include what and how often a person eats, a person's level of activity and behavioral factors. We have come to realize that obesity is a chronic condition and a lifelong battle that requires long-term lifestyle changes. The treatment of obesity can be difficult, especially when the patient does not have a correctable endocrine problem, such as a thyroid disorder. Low-calorie, low-fat diets – along with exercise – usually are recommended to treat obesity. However, this is often hard to maintain over a long period of time. "Crash" diets and appetite suppressants generally are appropriate only under very specific conditions and under close medical supervision.

Am I a Weight Loss Surgery Candidate?

Am I Obese?

Patients are considered morbidly obese if they weight more than 100 pounds over their ideal body weight or have a body mass index (BMI) greater than 35 to 40.

To calculate your BMI, refer to our website at clevelandclinicweightloss.com.

What it means

- BMI from 18.5 to 24.9 is a healthy weight
- BMI from 25.0 to 29.9 is an overweight condition
- BMI from 30.0 to 39.9 is moderate obesity
- BMI of 40 or above is severe obesity recover gradually.

BMI Chart

WEIGHT (LBS)

HEIGHT (ft/in)	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330
4'5"	30	33	35	38	40	43	45	48	50	53	55	58	60	63	65	68	70	73	75	78	80	83
4'6"	29	31	34	36	39	41	43	46	48	51	53	56	58	60	63	65	68	70	72	75	77	80
4'7"	28	30	33	35	37	40	42	44	47	49	51	54	56	58	61	63	65	68	70	72	75	77
4'8"	27	29	31	34	36	38	40	43	45	47	49	52	54	56	58	61	63	65	67	70	72	74
4'9"	26	28	30	33	35	37	39	41	43	46	48	50	52	54	56	59	61	63	65	67	69	72
4'10"	25	27	29	31	34	36	38	40	42	44	46	48	50	52	54	57	59	61	63	65	67	69
4'11"	24	26	28	30	32	34	36	38	40	43	45	47	49	51	53	55	57	59	61	63	65	67
5'0"	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65
5'1"	23	25	27	28	30	32	34	36	38	40	42	44	45	47	49	51	53	55	57	59	61	62
5'2"	22	24	26	27	29	31	33	35	37	38	40	42	44	46	48	49	51	53	55	57	59	60
5'3"	21	23	25	27	28	30	32	34	36	37	39	41	43	44	46	48	50	51	53	55	57	59
5'4"	21	22	24	26	28	29	31	33	34	36	38	40	41	43	45	46	48	50	52	53	55	57
5'5"	20	22	23	25	27	28	30	32	33	35	37	38	40	42	43	45	47	48	50	52	53	55
5'6"	19	21	23	24	26	27	29	31	32	34	36	37	39	40	42	44	45	47	49	50	52	53
5'7"	19	20	22	24	25	27	28	30	31	33	35	36	38	39	41	42	44	46	47	49	50	52
5'8"	18	20	21	23	24	26	27	29	30	32	34	35	37	38	40	41	43	44	46	47	49	50
5'9"	18	19	21	22	24	25	27	28	30	31	33	34	36	37	38	40	41	43	44	46	47	49
5'10"	17	19	20	22	23	24	26	27	29	30	32	33	35	36	37	39	40	42	43	45	46	47
5'11"	17	18	20	21	22	24	25	27	28	29	31	32	34	35	36	38	39	41	42	43	45	46
6'0"	16	18	19	20	22	23	24	26	27	29	30	31	33	34	35	37	38	39	41	42	43	45
6'1"	16	17	19	20	21	22	24	25	26	28	29	30	32	33	34	36	37	38	40	41	42	44
6'2"	15	17	18	19	21	22	23	24	26	27	28	30	31	32	33	35	36	37	39	40	41	42
6'3"	15	16	18	19	20	21	23	24	25	26	28	29	30	31	33	34	35	36	38	39	40	41
6'4"	15	16	17	18	20	21	22	23	24	26	27	28	29	30	32	33	34	35	37	38	39	40
6'5"	14	15	17	18	19	20	21	23	24	25	26	27	29	30	31	32	33	34	36	37	38	39
6'6"	14	15	16	17	19	20	21	22	23	24	25	27	28	29	30	31	32	34	35	36	37	38
6'7"	14	15	16	17	18	19	20	21	23	24	25	26	27	28	29	30	32	33	34	35	36	37
6'8"	13	14	15	17	18	19	20	21	22	23	24	25	26	28	29	30	31	32	33	34	35	36
6'9"	13	14	15	16	17	18	19	20	21	23	24	25	26	27	28	29	30	31	32	33	34	35
6'10"	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	34	35

Am I A Candidate?

For patients who remain severely obese after conventional approaches to weight loss – such as diet and exercise – have failed, or for patients who have an obesity-related disease, surgery may be the best treatment option. For other patients, however, continued medical management toward weight control – such as changes in eating habits, behavior modification and increasing physical activity – may be more appropriate.

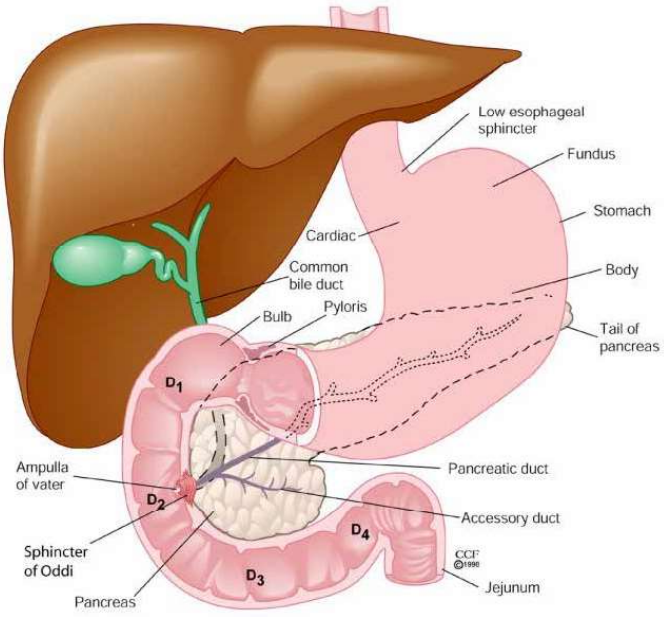
Research supports the benefits of weight loss surgery for those with a BMI between 35 and 39.9 with obesity re-lated health conditions such as type 2 diabetes, obstructive sleep apnea, high blood pressure, osteoarthritis and other obesity related conditions. You could be a candidate for surgical weight loss if you meet any of the following criteria:

- You are more than 100 lbs. over your ideal body weight.
- You have a Body Mass Index (BMI) of over 40.
- You have a BMI of over 35 and are experiencing severe negative health effects, such as high blood pres-sure or diabetes, related to being severely overweight.
- You are unable to achieve a healthy body weight for a sustained period of time, even through medically-supervised dieting.

Weight Loss Surgery Overview

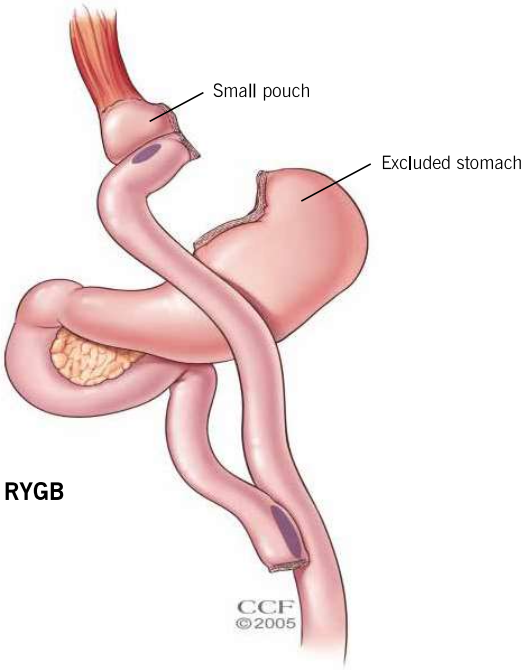
The Digestive Process

To better understand how weight loss surgery works, it is helpful to know how the normal digestive process works. As food moves along the digestive tract, special digestive juices and enzymes arrive at the right place at the right time to digest and absorb calories and nutrients. After we chew and swallow our food, it moves down the esophagus to the stomach, where a strong acid and powerful enzymes continue the digestive process. The stomach, which is about the size of a football, can hold about three pints of food at one time.



Roux-en-Y Gastric Bypass (RYGB)

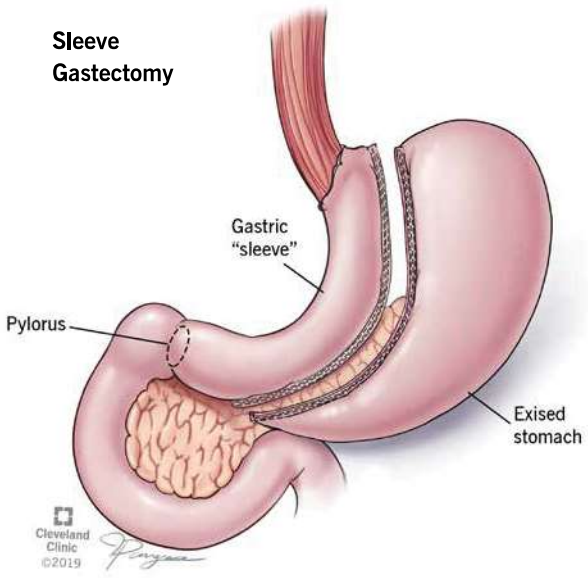
RYGB is one of the most common types of bariatric operations. The surgeon begins by creating a small pouch by dividing the upper end of the stomach. This restricts the food intake. Next, a section of the small intestine is attached to the pouch to allow food to bypass the duodenum, as well as the first portion of the jejunum. The small intestine is re-connected 150 centimeters from the pouch to allow ingested food and digestive enzymes to mix.



RYGB

Sleeve Gastrectomy (SG)

The Sleeve Gastrectomy (also known as Vertical Gastrectomy) includes removing about 75% of the stomach leaving a narrow gastric tube or "sleeve" through which food passes. No intestines are removed or bypassed during sleeve gastrectomy, and no device or implant is placed.



Sleeve Gastectomy

Laparoscopic Sleeve Gastrectomy can be used as a primary weight loss operation and is also used as a first step operation in patients with very large BMI or high risk medical patients. The second stage operation in these patients is a type of bypass procedure that is done 12-18 months after LSG when the patient has lost weight and is lower risk.

Duodenal Switch/Distal Gastric Bypass

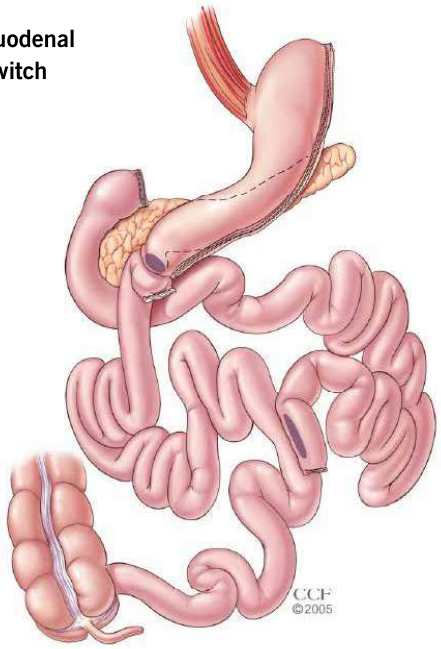
Distal Gastric Bypass and Duodenal Switch Procedures are procedures that help individuals lose large amounts of weight by restriction of the food volume and reducing absorption of calories consumed (malabsorption). The duodoenal switch is occasionally done as a primary procedure, however these procedures offer the renewed weight loss to patients who have gained weight after their original bariatric surgery- sleeve or bypass.

In conversion of standard RYGB to distal bypass, your small stomach pouch remains intact. The food channel is cut before the connection with the "Y" and attached to a section of intestine located 250-400 cm from the end or connection with the large intestine. This allows about three-fourths of the small intestine to be bypassed.

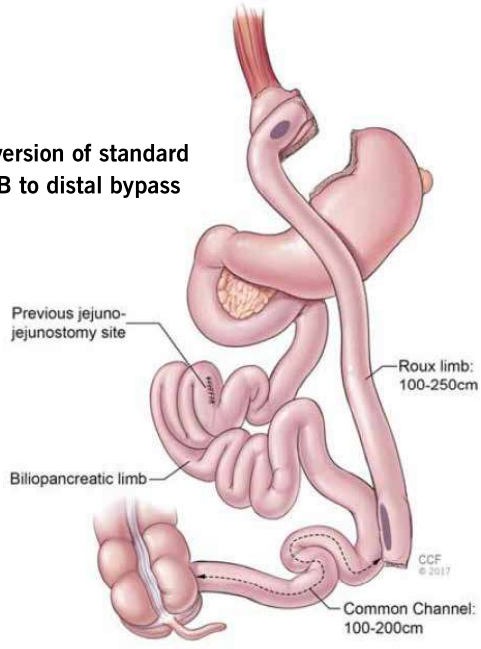
In conversion of sleeve gastrectomy to duodenal switch, your stomach remains intact with first part of the intestine is attached near the colon making a channel of 250-400 cm for absorbing nutrients and calories.

Vitamin supplements are mandatory because long limb bypass patients have decreased absorption of Vitamins A, D, E and K. You will also require extra supplementation of calcium and protein. You are required to take

Duodenal Switch



Conversion of standard RYGB to distal bypass



supplemental vitamins for the rest of your life in order to prevent serious nutritional deficiencies. Anemia, nerve damage, osteoporosis and malnutrition can occur if you discontinue taking vitamin supplements after surgery, making your vitamins as important as any prescription medications.

Results and Benefits of Weight Loss Surgery

Results of Weight Loss Surgery

Roux-en-Y Gastric Bypass – most patients will lose about 70 to 80 percent of their excess body weight. Substantial weight loss occurs 12 to 18 months after surgery; some weight regain is normal and can be expected at two to five years after surgery.

Sleeve Gastrectomy – most patients will lose 55 to 65 percent of their excess body weight in 12 months. Some long-term data suggests that most patients, after 5 years, maintain over 50 percent excess weight loss.

Benefits of Weight Loss Surgery

In our section about the health consequences of severe obesity, we listed problems, or co-morbidities, that affect most of the organs in the body. Most of these problems can be greatly improved, or entirely resolved, with successful weight loss. Many people have observed this, at least for short periods, after a weight loss by dieting. Unfortunately, with dieting, such benefits usually do not last, because weight regain almost always occurs. Research has shown that the weight loss achieved with bariatric surgery can be maintained for years following surgery. We instruct patients in a very simple program, which is much easier to follow when one is not constantly deprived on a diet.

Potential Health Benefits of Bariatric Surgery

- **Improve survival**

  There are 30 large studies that consistently show bariatric surgery is associated with improved survival and lower rate of death in patients with severe obesity compared with usual care.

- **Lower blood pressure**

  At least 70 percent of patients who have high blood pressure, and who are taking medications to control it, are able to stop all medications and have a normal blood pressure, usually within two to three months after surgery. When medications are still required, their dosage can be lowered, with reduction of the annoying side effects.

- **Normal cholesterol**

  More than 80 percent of patients will develop normal cholesterol levels within six months after the operation.

- **Improvement or cure of diabetes**

  More than 80 percent of Type II diabetics obtain excellent results after bariatric surgery, usually within a few weeks after surgery: normal blood sugar levels, normal Hemoglobin A1C values, and freedom from all their medications, including insulin injections. Based upon numerous studies of diabetes and the control of its complications, it is likely that the problems associated with diabetes will slow in their progression when blood sugar is maintained at normal values. There is no medical treatment for diabetes that can achieve as complete and profound an effect as surgery - which has led some physicians to suggest that surgery may be the best treatment for diabetes in the seriously obese

patient. Abnormal glucose tolerance, or "borderline diabetes," is even more reliably reversed by bariatric surgery. Since this condition becomes diabetes in many cases, the operation can frequently prevent diabetes as well.

- **Heart Health**

  Although we can't say definitively that heart disease is reduced, the improvement in problems such as high blood pressure, high cholesterol, and diabetes certainly suggests that improvement in risk is very likely. In one recent study, the risk of death from cardiovascular disease was profoundly reduced in diabetic patients who are particularly susceptible to this problem. It may be many years before further proof exists, since there is no easy and safe test for heart disease.

- **Asthma control**

  Most patients with asthma find that they have fewer and less severe attacks, or sometimes none at all. When asthma is associated with gastroesophageal reflux disease, it is particularly benefited by gastric bypass.

- **Respiratory sufficiency**

  Improvement of exercise tolerance and breathing ability usually occurs within the first few months after surgery. Often, patients who have barely been able to walk find that they are able to participate in family activities, and even sports.

- **Sleep apnea improves**

  Dramatic relief of sleep apnea occurs as our patients lose weight. Many report that within a year of surgery, their symptoms were completely gone, and they had even stopped snoring completely — and their partners agree. Many patients who require an accessory breathing apparatus to treat sleep apnea no longer need it after surgically induced weight loss. This should be confirmed by a repeat sleep study.

- **Resolution of gastroesophageal reflux disease**

  Relief of all symptoms of reflux usually occurs within a few days of Gastric Bypass surgery for nearly all patients. We are now beginning a study to determine if the changes in the esophageal lining membrane, called Barrett's esophagus, may be reversed by the surgery as well – thereby reducing the risk of esophageal cancer. Sleeve Gastrectomy patients generally have major improvement in GERD, but 20 to 30 percent of patients may need to take heartburn medication long-term.

- **Improvements in urinary stress incontinence**

  This condition responds dramatically to weight loss and usually becomes completely controlled. A person who is still troubled by incontinence can choose to have specific corrective surgery later, with much greater chance of a successful outcome with a reduced body weight.

- **Improved low back pain, degenerative disk disease, and degenerative joint disease**

  Patients usually experience considerable relief of pain and disability from degenerative arthritis and disk disease and from pain in the weight-bearing joints. This tends to occur early, with the first 25 to 30 pounds lost, usually within a month after surgery. If there is nerve irritation or structural damage already present, it may not be reversed by weight loss, and some pain may persist.

Risks of Bariatric Surgery

The current practice of bariatric surgery is extremely safe. Risk of complications after surgery is similar to gall bladder surgery, appendectomy and joint replacement.

What are the risks of gastric bypass surgery?

The more extensive the bypass operation, the greater is the risk for complications and nutritional deficiencies. Patients with extensive bypasses of the normal digestive process require not only close monitoring, but also lifelong use of special foods and medications.

Rare complications of gastric bypass surgery include bleeding requiring blood transfusion, leakage at the bowel connections or staple lines, ulcers in the stomach or small intestine, blood clots in the lungs or legs, persistent vomiting and abdominal pain, inflammation of the gallbladder, and failure to lose weight (very rare), long-term weight gain, bowel obstruction or twisting of the intestine ("internal hernia").

Near one-fifth of obese patients who have gastric surgery develop gallstones. Gallstones are clumps of cholesterol and other matter that form in the gallbladder. During rapid or substantial weight loss, a person's risk of developing gallstones increases. Gallstones can be prevented with supplemental medication (Ursodiol) taken for the first six months after surgery.

Up to 30 percent of patients who have Gastric Bypass surgery develop nutritional deficiencies such as D or B12, calcium, Vitamin D deficiencies that can lead to anemia, osteoporosis and metabolic bone disease. These deficiencies can be avoided if vitamin and mineral intakes are maintained and monitored regularly.

Women of childbearing age should avoid pregnancy for 18 months to two years after surgery until their weight becomes stable because rapid weight loss and nutritional deficiencies during pregnancy can put the developing fetus at risk.

The risks of surgery should always be considered relative to the benefits. Patients should carefully consider all of the risks and benefits before electing to have this surgery.

What are the risks of Sleeve Gastrectomy?

There are risks that are common to any laparoscopic procedure such as bleeding, infection, injury to other organs, or the need to convert to an open procedure. There is also a small risk of a leak from the staple line used to divide the stomach. These problems are rare and major complications occur less than 1% of the time.

Complications

Possible risks for bariatric surgery include, but are not limited to:

	COMPLICATION	DESCRIPTION
1	**Allergic Reactions**	Can range from minor symptoms such as a rash to overwhelming reactions that can lead to life threatening symptoms.
2	**Anesthetic Complications**	Anesthesia used to put you to sleep for the operation can be associated with a variety of complications up to and including death.
3	**Bleeding**	Bleeding is rare after surgery but can occur requiring transfusion.
4	**Blood Clots**	Also known as Deep Vein Thrombosis (in the legs) and Pulmonary Embolism (in the lungs).
5	**Infection**	Can be related to surgical incision, wound, bladder, pneumonia, skin, and deep abdominal infections.
6	**Leak**	One of the staple lines in the stomach from a gastric bypass or sleeve surgery can rarely leak stomach acid, bacteria, and digestive enzymes which can cause a severe abscess and infection. This can require surgery, intensive care, and even lead to death.
7	**Narrowing (stricture)**	A narrowing or ulceration on the connection between the stomach and small bowel can occur after surgery. This may require medical treatment and rarely surgery.
8	**Dumping Syndrome**	Symptoms include weakness, sweating, diarrhea, and dizziness. This can occur in patients after Gastric Bypass from eating too much sugar, carbohydrates, or fats.

>>continued

	COMPLICATION	DESCRIPTION
9	**Bowel Obstruction**	Any abdominal surgery can leave scar tissue that can later block the bowels.
10	**Minimally Invasive Surgery Risks**	This surgery technique uses small incisions to enter the abdomen, which in rare cases can lead to injury.
11	**Need for and Side Effects of Drugs**	All medications have risks and can sometimes cause a variety of side effects.
12	**Heart Events**	This includes stroke, heart attack, and other problems related to surgery and anesthesia.
13	**Risks of Transfusion**	Reactions to blood products are rare but can occur.
14	**Hernia**	Cuts in the abdominal wall can lead to hernias after surgery. Internal Hernia (twisting of the bowel) can occur after Gastric Bypass.
15	**Hair Loss**	Many patients develop temporary hair loss after surgery, due to low protein levels and rapid weight loss.
16	**Vitamin and Mineral Deficiencies**	After Gastric Bypass there is malabsorption of many vitamins and minerals. Patients must take vitamin and mineral supplements forever to protect themselves from these problems.
17	**Complications of Pregnancy**	Vitamin and mineral deficiencies can cause risks to the newborn and pregnant mother. Wait 18-24 months after surgery to become pregnant and make sure to take necessary vitamins during pregnancy.

>>continued

	COMPLICATION	DESCRIPTION
18	**Ulcers**	Gastric Bypass surgery has the risk of ulcers developing in the pouch, parts of the intestines, or bottom of the stomach. This can require medical treatment or surgery. Smoking and NSAID use can cause further complications such as chronic pain, bleeding, or even perforation.
19	**Other**	Major abdominal surgery has a variety of other unforeseen risks and complications that can occur both immediately or long after surgery.
20	**Depression**	Depression is a common medical illness that is common in the first few weeks after surgery.
21	**Alcohol Use Disorder**	These surgeries increase sensitivity to alcohol and some individuals develop problematic alcohol use afterwards. The best way to avoid this risk is to abstain from alcohol.
22	**Death**	1 in 1,000 or less chance of dying as a result of weight loss surgery. Much lower for most than the risk of staying severely obese and less than gallbladder surgery.

4. Preparing for Weight Loss Surgery

- Behavioral Health Welcome
- Behavioral Health Considerations
- Exercise for the Weight Loss Surgery Patient
- Instructions for Liquid Diet Before Surgery
- Clear Liquids
- Tobacco and Alcohol
- Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)

Behavioral Health Welcome

Weight Loss Surgery and Behavioral Health

Weight loss surgery is a life-changing procedure that requires careful thought, considerable awareness, and adjustment. Changes occur emotionally, socially and physically. Weight loss surgery is only a tool. However, this tool can be incredibly powerful in a well prepared patient. We want you to be as successful as you can with weight loss surgery!

In order to have a successful long-term outcome, it is necessary to make a number of permanent lifestyle changes. You will need to permanently change your behaviors, eating habits and activity patterns. All Cleveland Clinic Bariatric & Metabolic Institute patients receive a behavioral health evaluation because many habits, behaviors, thoughts and emotions can affect the success of weight loss surgery. Minimally, the evaluation will include a one-hour interview and questionnaire(s) assessing eating habits, weight history, stress and coping, and lifestyle behaviors. Often additional visits are needed to complete this evaluation. The behavioral health team member will make individualized recommendations to build upon your strengths and help you address challenges so that you can best lose weight and keep it off.

In addition to the behavioral health evaluation, our team can work with you both before and after surgery. It is sometimes necessary to have follow-up behavioral health visits either individually or in a group to change behavioral, emotional or psychological patterns that would interfere with a good surgical outcome. For example, many patients need help from a psychologist to change eating behaviors prior to surgery. Some eating patterns can reduce your ability to benefit from the surgery. Behavioral health can also provide additional support, stress management skills, assertiveness building, emotion management (e.g., anger or depression), assistance with quitting smoking, and strategies for reducing anxiety or fears associated with having the surgery. Further, after the surgery, many individuals are helped from behavioral health follow-up to improve psychological and social adjustment to the new lifestyle. Finally, we also encourage you to attend a weight loss surgery support group. Support groups give you additional information about weight loss surgery and the behavioral changes that you will need to make in order to reach a healthier weight and maintain it for the rest of your life.

In summary, we want to help you achieve the best possible post-surgical outcome. If you have any questions or concerns, please do not hesitate to share them with us during your first behavioral health appointment.

Behavioral Health Considerations

- Though weight loss surgery physically reduces the size of your stomach, it will not prevent you from eventually gaining back weight if you do not learn how to reduce the amount of food you eat and increase your physical activity to promote calorie burning.
  - It is entirely possible to "beat" the surgery by eating fatty foods or liquids (such as potato chips,milkshakes, ice cream, etc.), "graze" throughout the day or return to a sedentary lifestyle.
- Having a diagnosable eating disorder before surgery may increases the chances of poorer weight loss outcomes. Weight regain often occurs 2-5 years after surgery.
  - Binge Eating Disorder and Night Eating Syndrome are linked with greater risk of weight regain if loss of control eating persists after surgery.
  - Cognitive-behavioral consultation/ psychotherapy is often necessary to treat such eating disturbances.
- Individuals with mental health difficulties are at an increased risk of medical complications, emotional distress, and decreased satisfaction following surgery. Stabilization of any mental health problems is an important pre-operative goal.
  - There is a higher rate of psychological difficulties in individuals with severe obesity compared to the general population.
  - Clinical depression is the most commonly reported psychiatric illness.
  - A prescreening for psychological difficulties is important so that proper intervention can be established,reducing the risk of post-surgery complications.
- Individuals who use eating to cope with negative emotions or stress are more successful after surgery if they have learned to replace eating with healthier coping strategies such as relaxation, exercise, or developing a hobby.
- Those who have had prior substance abuse problems are at an increased risk for relapse. Alcohol is metabolized differently after surgery leading to quick intoxication on much smaller amounts. Some individuals may develop new problems with substances after surgery. Ongoing awareness and support can help to reduce this risk. The best way to reduce this risk is to avoid alcohol and other substances.
- The majority of patients who have weight loss surgery report having a better quality of life after surgery and recovery.
- The majority of patients also report improved body image.
  - It is not uncommon to develop new attitudes and perceptions about life after surgery as a result of the dramatic weight loss and new body image. However, people can be dissatisfied with excess skin after weight loss. As a result of lifestyle changes individuals often report significant changes in their relationships.
- Weight loss surgery alone will not increase your self-esteem. Many factors play a role in one's self-esteem, such as current and past experiences, perceptions, and attitudes.
  - How you perceive yourself after surgery depends on more than just weight loss. This is especially true when an individual's weight begins to increase or stabilize after surgery.

- If you are currently on disability for obesity or an obesity-related medical condition, it is important to plan for potential discontinuation of this income after surgery.

- Individuals who have weight loss surgery often experience both positive and negative effects in their marital and interpersonal relationships.
- Patients who have undergone surgery and returned to work have reported mixed feelings. This is due to individual differences in how one welcomes the new attention received.
- If you are currently on disability for obesity or an obesity-related medical condition, it is important to plan for potential discontinuation of this income after surgery.
- The majority of patients who have undergone weight loss surgery report an increase in energy after a brief recovery period. This new energy should be put to good use as soon as possible by exercising and being active.
- As you make permanent lifestyle changes to create a healthier you, behavioral health care is able to provide you with:
  - Ongoing support and information about how our thoughts and beliefs can impact our ability to make changes in our eating and exercise patterns.
  - Identification and treatment of potential problem areas such as depression, anxiety, or eating disorders.
  - The development of specific plans for how to cope with problem areas or stresses that can impede your ability to lose weight and maintain a healthier weight.

Exercise for the Weight Loss Surgery Patient

Exercise is the key to achieving weight loss before and after a weight loss surgery. An exercise plan should begin gradually and increase as tolerated, being closely supervised by a doctor. Your exercise needs to begin before surgery and resume as soon as allowed after weight loss surgery.

A consistent exercise plan aids in reaching and maintaining an optimal weight loss,as well as helping to:

- Tone your muscles
- Increase energy and metabolism
- Tighten loose skin caused by rapid weight loss
- Improves mood and self-esteem/relieves stress

Post surgery, fewer calories are consumed sometimes causing the body to react as f you are starving yourself. In search for more energy, the body can begin to burn muscle instead of fat. To prevent this, exercise needs to start as soon as possible to burn fat instead of muscle.

What exercise routine should you be following?

- **Pre-surgery**
  Begin your activity regime at a slow pace. Start with light activity and work your way up - walking or aerobics. Low impact activity is still beneficial. Aim for at least 30 minutes of continuous activity 5-6 times per week.
- **Hospital Stay**
  You will need to get up and walk. This will help you feel better and get you on the right track for going home.
- **Initiation Stage: Home After Surgery: Week 1-4**
  Start slow again. Walk around the house or use stairs as tolerated. You are just beginning to heal so light activity is recommended.
- **Advancement Stage: Week 5-6**
  Make sure your surgeon has approved you to increase your activity/exercise. Start slowly with low impact exercise – stationary bike, treadmill and/or housework.
- **Maintenance/Lifestyle Modification Stage: Week 7 and on**
  Increase activity/exercise, any activity that will elevate your heart rate to 120 or greater, on a regular basis – long-term goal should include:

  - **Cardio**
    Can include treadmill, stationary bike, jogging, fast walking, swimming, tennis:

    30 minutes, of moderate intensity five times a week

    OR

    150 minutes a week

    OR

    10,000 steps daily

    AND

  - **Muscle Strengthening (weights or bands):**
    At least 2 nonconsecutive days a week

Recommendations are based on The American Medical Society for Sports Medicine Guidelines for routine exercise. www.amssm.org

Instructions for Liquid Diet before Surgery

Once you are given your surgery date you will be asked to follow an 800 calorie liquid diet to begin 2 weeks before your surgery date.

This diet will consist of only protein shakes and clear liquids.

Below are 4 options that are recommended for the 800 calorie protein liquid diet

If you would like to use other products discuss this with your dietitian or refer to the nutrition chapter in "Your Guide to Surgery" book.

- 4 ½ bottles of "High Protein" Slim Fast daily

OR

- 5 ½ packets of "No Sugar Added" Carnation Instant Breakfast Drink mixed with fat free or 1% milk daily

OR

- 5 individual cartons of Atkins Advantage daily

OR

- 4 ½ bottles of "Glucose Controlled" Boost daily

Note:
If you have diabetes and are taking oral medications and/or insulin or if you are being treated for high blood pressure you will want to discuss this preop diet with your doctor who manages these medications

** **A**ll patients should begin taking a **B** complex vitamin daily that contains at least 75mg Thiamine (**B**1).**

Clear liquids include:

- Water
- Clear broth or bouillon
- Plain gelatin (NO sugar added, NO fruit or topping)
- Decaffeinated Coffee or Tea (NO milk/ creamer/sugar
- Propel or Crystal Light beverages (NO sugar added)
- Popsicles (NO sugar added)

DAY BEFORE SURGERY - LIQUID DIET

1. Last Protein shake should be before 6pm.
2. It is important that you stay hydrated - 64 ounces of fluid per day. Please measure the amount of fluid you drink.
3. Drink a 28-32 ounce bottle of a regular (not sugar free) sport drink (Gatorade, Powerade, etc.) the night prior to surgery. If the sport drinks aren't tolerable, you may substitute with no sugar added - no pulp juice - apple, cranberry, lemonade, white grape or orange

DAY OF SURGERY - CLEAR LIQUID DIET

Drink 12-20 ounces of a regular sport drink (or juice as above) stop liquids 2 hours before scheduled arrival time.

Clear Liquids

Non carbonated sugar-free/low sugar clear liquids

Water Crystal Light®

Wyler's Light®

Diet Snapple®

Diet Iced Tea®

Propel®

Veryfine Fruit20 O Plus®

Glaceau Smart Water®

Walgreens Natural Flavor H2O Plus®

Low Calorie Juice (Splenda®)

AriZona® Diet Ice Tea (Splenda®)

Country Time Sugar-free Pink Lemonade Mix®

Sugar-free Kool-Aid® Mix

Champion Lyte Sugar-free Refresher® (Splenda®)

Nestea® Diet Citrus Green Tea

PJ's Crystal Beach Loganberry Diet®

Caffeine Free Coffee

Caffeine Free Tea

Sugar-free Jello®

Sugar-free Popsicle®

Eddy's No Added Sugar Fruit Pops®

Broth (chicken, beef, vegetable)

Clear Liquids

Tobacco and Alcohol

Tobacco

Patients are required to stop smoking prior to surgery and permanently avoid all tobacco products (e.g., cigarettes, cigars, chewing tobacco, hookah, e-cigarettes, vaporizers, nicotine patches/gums). Depending on the surgical procedure, patients must quit all nicotine products from one to six months before surgery is scheduled. A series of negative nicotine screens are required to verify abstinence.

Smoking Effects:

- Impedes proper lung function.
- Increases risk of pneumonia post-op.
- Reduces circulation by constriction.
- Inhibits healing of surgical sites.
- Increases risk of blot clots (DVT)
- Stimulates production of stomach acid.
- Increase risk of ulcer formation.

The Cleveland Clinic Tobacco Treatment Center can be reached at 216.444.8111. For additional information call Ohio Quit Line at 1.888.Quit.Now (1.800.784.8669).

Alcohol

Excessive use of alcohol may substantially increase operative risks or may result in cancellation of surgery.

Post-operative alcohol use the first six months should be completely avoided while your surgical sites are healing. Alcohol can cause gastric irritation and lead to ulcer formation.

Your tolerance for alcohol will dramatically change after surgery. Use caution with alcohol consumption, as a few sips can be highly intoxicating. It will also take longer to metabolize alcohol. One drink after gastric bypass surgery puts you above the legal level of intoxication (0.08). Bariatric surgery is related to increased risk of developing an alcohol use disorder, even if you did not have problems with drinking before surgery.

Finally – alcohol is high is calories, may cause “dumping syndrome” and can interfere with weight loss and/or maintenance.

We do not recommend use of alcohol after bariatric surgery. If you choose to drink alcohol after the six month recovery period, limit yourself to one or less. Never drive if using alcohol after bariatric surgery.

Non-Steroidal Anti- Inflammatory (NSAIDS)

Please ask your surgeon about Non-Steroidal Anti- Inflammatory (NSAIDS).

Stop TWO WEEKS prior to weight loss surgery.

Non-Steroidal Anti- Inflammatory (NSAIDS) have been linked to cause stomach ulcers after weight loss surgery.

List of Medications Associated with Bleeding or Ulcers:

Non-Steroidal Anti-Inflammatory (NSAIDS)

Advil

Aleve

Anaprox

Ansaid

Aspirin (Including Excedrin, Bufferin)

Bextra

Cataflam

Celebrx

Clinoril

Daypro

Feldene

Ibuprofen

Indocin

Indocin SR

Lodine

Lodine XL

Motrin

Naprelan

Naprosyn /EC-Naprosyn

Orudis

Relafen

Tolectin

Toradol

Vioxx

Voltaren

5. Nutritional Guidelines

- Required Vitamin and Mineral Supplements
- Protein – A Necessary Part of Your Diet
- Difficult Foods to Tolerate After Surgery
- Common Names for Sugar, Sugar Alcohols and Artificial Sweeteners
- Caffeine
- Diet Phases and Recipes

Required Vitamin and Mineral Supplements

Roux-en-Y Gastric Bypass / Sleeve Gastrectomy Post-op Vitamin and Mineral Supplementation

Read the supplement label. NO single vitamin or mineral may contain everything you need.

Where to buy vitamins?

Please read the labels to get the specific form and amount of vitamins.

- Bariatric Fusion / **www.bariatricfusion.com**
- Bariatric Advantage / **www.bariatricadvantage.com**
- Celebrate Vitamins / **www.celebratevitamins.com**
- Health stores: GNC, The Vitamin Shoppe, Whole Foods
- Pharmacy stores: Walgreens, CVS
- Vita4Life / **www.vita4life.net**
- See "Obesity and Bariatric Resource Information" for more references as to where you can buy vitamins.

We do not endorse any company mentioned in this guidebook.

TYPE OF VITAMIN/ MINERAL	DOSAGE
Adult Multivitamin with Iron	Daily
Calcium Citrate with Vitamin D **Vitamin D3**	1200-1500 mg 3,000 IU
Vitamin B12	500mcg sublingual pill/day or 1cc injection monthly or weekly nasal spray (Rx)
Vitamin B Complex (with Thiamine)	Thiamine should be in the dosage of 12 mg/day
Iron DO NOT TAKE WITH CALCIUM	45-60mg/day
Zinc **Biotin** Optimal to minimize temporary hair thinning	15mg/day 3000mcg//day

Protein – A Necessary Part of Your Diet

What is protein?

Protein is the nutrient responsible for maintenance of all of the tissues in your body. This includes bone, muscle, organs and even hair and skin. In addition, protein helps the body function properly and is essential for healing. The average woman needs 50-60 grams of protein a day and the average man needs 60-70 grams of protein a day to stay healthy. After weight loss surgery, your minimum protein intake is **60 grams a day.**

Your specific protein goal is: _____

Your best sources of protein are:

- lean beef
- poultry
- fish
- milk
- dairy products
- low fat peanut butter
- beans
- eggs

Make sure you use low-fat dairy products, lean cuts of meat, white or dark meat of poultry without the skin, eggs or egg substitutes.

Protein Supplements

*Note: The Bariatric and Metabolic Institute does not endorse these products. Also, check with your dietitian or surgeon before using any other products that are not listed on this page. Some products contain large amounts of other substances (i.e. caffeine, hidden sugars, herbs) or they may interact with medications.

PROTEIN SHAKES, POWDERS AND DRINKS

Preferably choose a protein shake that is:
- High in protein (20 grams or more per serving)
- Low in sugar (<5 grams)

If you find another protein shake that you prefer or have any questions, please provide label to our office for approval.

PROTEIN SHAKES, POWDERS AND DRINKS

PRODUCT	SERVING SIZE	SUGAR (g)	PROTEIN (g)	COMMENTS
Protein Powders				
Bariatric Aid Whey Protein	2 scoops	2.5	17	
Isopure®	20 oz	0	40	
Unjury®	1 scoop	0-2	20	Available unflavored
Myoplex® Lite Powder	1 pkg.	2	25	
Pure Whey	1 scoop	3	22	

>>continued

PROTEIN SHAKES, POWDERS AND DRINKS

PRODUCT	SERVING SIZE	SUGAR (g)	PROTEIN (g)	COMMENTS
Protein Powders *continued*				
100% Whey Protein	1 scoop	2	21	
American Whey Protein™	1 scoop	6 g CHO	20	
Designer Whey Protein Powder®	1 scoop	<1 g	18.5	
Pro-Score® 100	1 scoop		17	
Atkins™ Nutritionals Shake Mix	2 scoops	1	24	
Muscle Milk™	2 scoops	4	32	
Met-Rx® Protein Plus	2 scoops	2	46	
EAS® Precision Protein	1 scoop	2	20	
Nectar™	1 scoop	0	23	
Zero Carb Isopure®	3 scoops	0	50	
Keto Shake™	2 scoops	0	24	
Ultimate Nutrition® LO Carb Whey	1 scoop	<0.5	20	
ISS Research™ Advantage Matrix	1 packet	3	42	
ISS Research™ Complete Pro	1 packet	1	42	
Carb Watchers Lean Body®	1 packet	2	40	
Optimum Nutrition® Whey Gold	1 packet	4	45	
Muscle-Link™ Muscle Meals	1 packet	2	40	
Champion Ultramet® Lite	1 packet	2	29	
Jay Robb® Whey Protein*	1 package	0	25	
100% Raw Foods and Whey Protein*	1 package	1	20	
Biochem® 100% Green & Whey*	2 scoops	<1	20	

>>continued

PROTEIN SHAKES, POWDERS AND DRINKS

PRODUCT	SERVING SIZE	SUGAR (g)	PROTEIN (g)	COMMENTS
Soy Protein Powders				
Genisoy® Soy protein	3 Tbsp			
Puritan's Pride® Pure Soy Protein	1 scoop	0	25	
Soy Ultra XT® Natural Protein Powder	2 scoops	0	25	Available unflavored
Soy Protein	1 serving	10g CHO	21	Available unflavored
Super Blue Pro-96®	1 packet	<0.5	25	Available unflavored
Protein Powders with No Artificial Sweeteners				
Whey To Go®	1 packet	1	16	Available unflavored
Carb Solutions®	2 scoops	0	21	
Ready to Drink Protein Shakes				
Atkins™	1 can	1	20	
EAS® AdvantEDGE®	1 container	0	17	
Slim Fast® Low Carb	1 can	1	20	
EAS® Myoplex Lite	1 container	1	25	
EAS® Myoplex Carb Sense	1 container	<1	25	
EAS® Results	1 container	1	15	
Ultra® Pure Protein	1 can	1	35	
Resource Optisource®	4 oz	0	12	
Premier	1 container	1	30	
Clear Protein Drinks (Fruit Flavored)				
Isopure® Drink	20 fl	0	40	
Extreme Pure Protein® Drink	20 fl	0	42	
Protein Twist™	20 fl	0.5	40	
Whey Fruity®	1 scoop	0	26	
Nectar™	1 scoop	0	23	

Difficult Foods to Tolerate After Surgery

Meat & Meat Substitutes	Steak Hamburger Pork chops Fried or fatty meat, poultry or fish
Starches	Granola Whole-grain or white bread (non-toasted) Bagels Soups with vegetable or noodles Rice Dense Pasta
Vegetables	Fibrous vegetables (raw celery, corn, cabbage)
Fruits	Dried fruits Coconut Orange and grapefruit membranes Skins (peel all fruit)
Miscellaneous	Carbonated beverages Pickles Seeds
***Sweets** (mostly after bypass surgery) Sweets should NOT be part of your diet if you want to reach your weight loss goal followed by weight maintenance	Candy Desserts Jam/jelly Sweetened fruit juice Sweetened beverages Other sweets

Common Names for Sugar, Sugar Alcohols and Artificial Sweeteners

Common names for sugar

- To avoid unnecessary empty calories and to re-duce your risk of developing Dumping Syndrome,limit your intake of sugar to less than 5 grams per serving
- Choose products that are labeled “sug-ar-free.”They will have less than 5 grams of sugar per serving.
- Read food labels. Read ingredient lists. Ingredients are always listed from most to least, so choose products that do not have sugar listed as the first 5 ingredients
- Sugar may be called other things besides “sugar.”These names are:
  - Agave
  - Brown sugar
  - Confectioner’s sugar
  - Corn syrup
  - High fructose corn syrup (HFCS)
  - Corn sweeteners
  - Dextrose
  - Fructose
  - Glucose
  - Granulated sugar
  - Honey
  - Levulose
  - Molasses
  - Raw sugar
  - Sucrose
  - Syrup
  - Turbinado

Sugar alcohols

- Avoid sugar alcohols
- They may cause gas and diarrhea as they are not well absorbed.
- Sometimes these sugar alcohols are referred to as “sugar-replacers”
- Examples of sugar alcohols are:
  - Sorbitol
  - Xylitol
  - Mannitol
  - Maltitol
  - Lactitol
  - Erythritol Isomalt

Commons names for artificial sweeteners

* Sugar substitutes, also called artificial sweeteners, are acceptable in the bariatric nutrition plan

- Examples of artificial sweeteners are:
  - Acesulfame-K (Acesulfame Potassium)
  - Aspartame (NutraSweet®, Equal®, Equal Spoonful®)
  - Neotame
  - Saccharin (Sweet'n Low®)
  - Stevia® (herbal sweetener)
  - Sucralose (Splenda®)
  - Tagatose Cyclamate (Sugar Twin®, Sucaryl®)
  - Truvia®

Caffeine – a little can be too much

What is Caffeine?

Caffeine is a stimulant and is naturally found in more than 60 plants, including cocoa, tea and coffee. Caffeine is also added to soft drinks and is often a component of many over-the-counter medications and dietary supplements including certain protein powders and drinks. Caffeine temporarily speeds up the body's heart rate, boosts energy and is often used to "fight fatigue". Caffeine acts as a diuretic, which means loss of fluids. As a result, caffeine can leave you feeling thirsty if used as your main source of fluid intake. The recommended intake of caffeine is defined as 300 milligrams or no more than 3-5 ounce cups of coffee per day.

However, it is best to **AVOID** caffeine after surgery. For every 8oz of caffeine you drink, you would have to add an additional 8 oz. of a non-caffeinated beverage. If you continue to drink caffeine after surgery, it will be very difficult for you to meet your fluid goals.

If your diet contains a large amount of caffeine, you should decrease your intake gradually to prepare for surgery. This will help to avoid headaches caused by caffeine withdrawal.

Some common caffeine-containing foods and beverages:

BEVERAGE/ FOOD	AMOUNT	CAFFEINE (milligrams)
Coffee, brewed	1 cup	180
Coffee, instant	1 cup	120
Coffee, decaf	1 cup	3
Tea, brewed	1 cup	90
Tea, instant	1 cup	28
Tea, decaf	1 cup	1
Cocoa	1 cup	4
Cola	12 oz	36-90
Chocolate	1 oz	25

Diet Phases and Recipes

PHASE I:

Sugar-free, clear liquids

Duration of Phase I: Approximately 1 – 3 days

Important considerations

- Phase I may begin once water is well tolerated
- You may be on Phase I for 1-3 days or until tolerated or discharged from the hospital
- Drink 1–3 ounces (1/8 to 3/8 of a cup) or as tolerated of sugar-free, clear liquids every hour
- A clear liquid is defined as non-dairy fluids that cause a minimal amount of residue in the digestive tract
- Clear "solids" that become liquid at body temperature are also appropriate such as diet Jello® and sugar-free popsicles
- No carbonated beverages
- Drink decaffeinated clear liquids (for at least 3 months)
- No milk or dairy
- No vitamin or mineral supplementation at this time
- Sugar substitutes can be used (see list of sugar substitutes)

Nutritional considerations

- Consume at least 64 ounces of sugar-free, decaffeinated clear liquids per day
- Check tolerance level
- Stop drinking when you feel full

Examples of clear liquids

- Water
- Crystal Light®, sugar-free Snapple®, sugar-free Kool-Aid®, etc.
- Plain decaffeinated tea (no milk or creamer)
- Plain decaffeinated coffee, black (no milk or creamer)
- Jello®
- Popsicles
- Clear flavored broth (chicken, beef, seafood, ham)

Menu sample

Morning: Decaffeinated coffee with Splenda®

Breakfast: Low sodium chicken both

Midmorning: Crystal Light®

Lunch: Low sodium seafood broth

Mid-afternoon: Water

Dinner: Low sodium ham broth

Evening: Decaffeinated tea with Splenda®

Important reminders when on Phase I

- Consume at least 64 ounces of sugar-free, decaffeinated, clear liquids per day
- Check tolerance level
- Stop drinking when you feel full
- Sip slowly, do not gulp
- Do not use a straw
- Avoid extreme temperatures (extreme hot or cold)
- No carbonated beverages
- No milk, cream or other dairy products
- Consume decaffeinated clear liquids for at least 3 months after surgery
- Remember to keep increasing physical activity as tolerated

Exercise – sample workout

Post-op at home, week 1

Walk 5–10 minutes, 3 times per day

Post-op, week 2

EXERCISE	TIME	FREQUENCY	INTENSITY
Walk	20 Minutes	2 times/week	As tolerated
Strength Exercise	Do not start until medically cleared		

PHASE II:

Sugar-free, Liquid, High Protein shakes

Duration of Phase II: Approximately 2 weeks

Important considerations

- Phase II may begin in the hospital if you tolerate Phase I or at home upon discharge.
- It is recommended that you stay on Phase II for a total of 2 weeks to ensure proper tolerance and healing.
- The goal is to consume at least 60 grams of protein per day in the form of a liquid, high protein shake.
- Consume no solid food at this time
- Drink 4–8 ounces of protein shake 3 times per day (4–8 ounces or ½ to 1 cup for breakfast; 4–8 ounces or ½ to 1 cup for lunch; 4–8 ounces or ½ to 1 cup for dinner).
- Do not skip any meals.
- Stop drinking when you feel full.
- Consume sugar-free, non-carbonated, decaf-feinated clear liquids in between shakes for a total of 64 ounces (8 cups) per day.
- Follow the "30-Minute Rule" to fluid intake: wait 30 minutes before and after your shake to drink other fluids.
- Vitamin or mineral supplementation as tolerated.
- Resume daily Vitamin B complex that contains at least 75mg Thiamine (B1).

Important considerations about protein shakes

- Choose a High Protein Shake that contains at least 20 grams of protein per serving.
- Choose a High Protein Shake that contains less than 10 grams of sugar.
- The source of the protein should preferably be whey protein, however, shakes may be soy or egg based or a combination of whey, soy or egg.
- You may use skim or 1% milk or water to mix the protein shake if it is powder-based.
- You may use lactose-free milk if lactose intolerant.
- Do not use milk as a substitute for protein shakes since it does not provide enough protein per serving.
- Due to possible sensory changes in taste and smell, choose a variety of flavors or non-flavored protein shakes; always check for tolerance.

Nutritional considerations

- Consume at least 60 grams of protein per day in the form of a liquid, high protein shake.
- Consume sugar-free, non-carbonated, decaf-feinated clear liquids in between shakes for a total of 64 ounces (8 cups) per day.
- Consume no solid food at this time.
- Check tolerance level.
- Stop drinking when you feel full.

Menu Sample

Morning: Decaffeinated coffee with Splenda®

Breakfast: Protein shake with 20 grams of protein

Midmorning: 8 oz. Crystal Light

Lunch: Protein shake with at least 20 grams of protein

Mid-afternoon: 8 oz. chicken broth

Dinner: Protein shake with 20 grams of protein

Important reminders when on Phase II

- Consume at least 60 grams of protein per day in the form of a liquid, high protein shake.
- Consume sugar-free, non-carbonated, decaffeinated clear liquids in between shakes for a total of 64 ounces (8 cups) per day.
- Consume no solid food at this time.
- Check tolerance level.
- Stop drinking when you feel full.
- Sip slowly, do not gulp.
- Do not use a straw.
- Avoid extreme temperatures (extreme hot or cold)
- No carbonated beverages, no alcoholic beverages.
- Consume decaffeinated clear liquids for at least 3 months after surgery.
- Follow the "30-Minute Rule" to fluid intake. Wait 30 minutes before and after your shake to drink other fluids.
- Remember to keep increasing physical activity as tolerated.

Exercise – sample workout

Post-op, week 2

EXERCISE	TIME	FREQUENCY	INTENSITY
Walk	20 Minutes	2 times/week	As tolerated
Strength Exercise	Do not start until medically cleared		

PHASE III:

Soft/Pureed, High Protein Foods

Duration of Phase III: Approximately 6-8 weeks

Important considerations

- Phase III may begin 2 weeks after surgery if Phase II is well tolerated.
- It is recommended that you stay on Phase III for 6–8 weeks to ensure proper tolerance of solid, soft foods.
- Follow the "30-Minute Rule" to fluid intake: wait 30 minutes before and after your food to drink fluids.
- The goal is to consume at least 60–80 grams of protein per day in the form of soft or pureed high protein foods.
- Inadequate protein intake can lead to fatigue, loss of lean body mass and increase your risk of infection and other illnesses.
- Eat at least 3–4 times per day. Attempt to consume 3–4 ounces of protein per meal.
- As an estimate, 1 ounce of protein is approximately 7 grams. For example, if you consume 3 ounces of chicken, this would equal approximately 21 grams of protein.

Some good protein suggestions are:

Seafood	Tuna, tilapia, grouper, soft flaky fish such as cod, haddock, sea bass – canned or fresh
Shellfish	Scallops, lobster, shrimp, crab – canned or fresh
Dairy	Low fat, sugar-free or carbohydrate-controlled yogurt without visible fruit pieces Low fat cottage cheese, ricotta cheese, farmer's cheese or other soft cheeses
Eggs	Eggbeaters®, egg whites or whole eggs (no more than 1 egg yolk per day): boiled, scrambled, baked, poached (avoid fried or undercooked eggs)
Poultry	Turkey, chicken, game hen, duck breast Deli such as roast turkey breast or chicken breast – canned or fresh
Legumes	Black beans, kidney (red) beans, garbanzo beans, white beans, lentils etc. Hummus and pureed beans may be well tolerated.

Tofu	Tofu, Boca Burger® (without the bun), Morning Star Farms® soy products
Meat	Ham (red meat and pork may be difficult to digest; always check your tolerance level) Low sodium, rindless, no sugar added cold-cuts and deli meats – canned or fresh

Important considerations about soft or pureed proteins

- It is acceptable to add low sodium broths or lowfat dressings to prepared protein sources to add moisture.
- Do not fry or put "breading" on the protein.
- Proteins should be moist and lean.
- Place food in a blender or food processor to create a soft/pureed consistency.
- Avoid soups.
- Lean red meat as tolerated.
- Avoid spicy foods.
- Avoid dried out, over-cooked meats; many patients find that they cannot tolerate chicken after surgery; always check your tolerance to any food.
- Introduce one "new" food at a time.
- Use moist cooking methods such as boiled, baked, sautéed, poached, stewed or braised (See definitions of cooking terms).
- Avoid frying protein foods.
- Always check for tolerance when trying a "new"food. Introduce solid food slowly
- Even though food is soft and pureed, take small bites of food and chew food well (25 times).

Exercise – sample workout

Post-op, week 3 to 2 months (see next page).

EXERCISE	TIME	FREQUENCY	INTENSITY
Walk	15-30 Minutes	4 times/week	Increase the time by 5 minutes every session until you are working continuously for 45 minutes per session.
Strength Exercise	May begin weight training with doctor's approval. Add 2 days of light weight training as follows: Day 1: Upper body, 15-30 minutes Day 2: Lower body 15-30 minutes, as tolerated		

Exercise – sample workout

Post-op, by 2 months time.

EXERCISE	TIME	FREQUENCY	INTENSITY
Walk or start other cardio exercises; swimming, rowing, aerobics, stair climbing with surgeon's approval.	30-45 Minutes	5-6 times/week	Add a 3rd day of light weight training alternating upper and lower body, 15-30 minutes, as tolerated.

Nutritional considerations

- You may continue to use protein shakes as a meal replacement if you find that you cannot consume enough protein.
- Do not skip meals; have 3 meals per day (breakfast, lunch and dinner).
- Consume sugar-free, non-carbonated, decaffeinated clear liquids in between soft/pureed high protein foods for a total of 64 ounces (8 cups) per day.
- Check tolerance level.
- Stop eating when you feel the sense of fullness.
- During Phase III, no breads, no cereals, no rice, no noodles, no pastas, no crackers, no potatoes (sweet or white), no yams, no corn, no plantain, no yucca, no fruits, no fruit juices, no vegetables, no carbonation, no caffeine, no alcoholic beverages.
- Continue vitamin and mineral supplementation – add in iron and calcium.

Menu sample

Morning: Decaffeinated coffee with Splenda® may be used; Wait at least 30 minutes after consuming fluids before eating protein foods
Breakfast: 4 ounces of scrambled egg
Midmorning: 8 oz Crystal Light®
Lunch: 3–4 ounces of pureed tuna fish made with 1 Tbsp of low fat mayonnaise
Mid-afternoon: 8 oz Crystal Light®
Dinner: 3–4 ounces of low fat, low sodium turkey deli slice
Evening: 8 oz Crystal Light®

Important reminders when on Phase III

- Even though food is soft and pureed, take small bites of food and chew food well (25 times) before you swallow.
- Stop eating or drinking when you feel full.
- Sip fluids slowly, do not gulp.
- Do not use a straw.
- Avoid extreme temperatures (extreme hot or cold).
- Follow the "30-Minute Rule" to fluid intake: wait 30 minutes before and after your food to drink fluids.
- Remember to keep increasing physical activity as tolerated.

Phase III breakfast ideas

- Protein shakes are a fine way of getting in some of your daily protein intake and may be more convenient to consume for breakfast.
- Low fat, carbohydrate-controlled or sugar-free, yogurt.
- Low fat, cottage cheese, farmer's cheese or ricotta cheese.
- Low fat string cheese.
- Eggs, whole, egg whites or Egg Beaters®; Eggs may be scrambled, baked, poached or made into an omelet.
- For example, if you are in Phase III and you make an omelet, you can add cheese and ham but no vegetables.
- For example, if you are in Phase IV and you make an omelet, you can add cheese, ham and mushrooms (or other vegetable).
- Low fat turkey or tofu breakfast sausage; bake or microwave them; don't fry them.
- Low fat, tofu hot dogs.
- You may also consume lunch/dinner foods for breakfast! Always check your own personal food tolerances and preferences.

Phase III lunch/dinner ideas

- Grilled, baked, poached seafood/shellfish (any type that you can tolerate); do not fry or bread the seafood.
- Whitefish, tilapia, grouper, orange roughy, flounder, sole, snapper, catfish, perch, herring, swordfish, halibut, cod, sea bass, salmon, scallops, shrimp, lobster, crab, etc.
- Egg salad, tuna salad, crab salad, chicken salad (light mayonnaise or light salad dressing is okay, but no relish, celery or onion unless you are in Phase IV of the Cleveland Clinic Florida diet protocol).
- Grilled, baked, poached, braised or sautéed poultry such as chicken, Cornish game hen, turkey or duck.
- Legumes (black beans, navy beans, pinto beans, Northern beans, white beans, etc); these can easily be made into a "dip" or a hummus or they can be baked or added to chili.
- Grilled Tofu burgers.
- Deli meats such as turkey, chicken, ham, etc. Don't eat the deli "rind." Choose low sodium deli and those that do not have added sugars. You can create a deli roll-up and roll a piece of cheese in the middle.
- Baked, crustless cheese quiche.
- Turkey or tofu meatballs.
- Low fat cheese fondue.
- Plain turkey or tofu meatloaf (use eggs or milk to bind it together).
- Egg and cheese frittata.

Phase III recipes

Baked Eggs with Cheese (Serves 4)
INGREDIENTS:

4 large eggs

¼ cup low fat cheddar cheese

¼ cup skim or 1% milk

1 teaspoon of non hydrogenated margarine or olive oil

1. Preheat the oven to 350 degrees F.
2. Crack 1 egg individually into 4 small baking ramekins.
3. Add ¼ cup of milk to each ramekin.
4. Top with cheese.
5. Bake until egg is set and the internal temperature of the yolk is 165 degrees F.

Egg, Cheese and Ham Frittata (Serves 8)
INGREDIENTS:

8 large eggs

8 slices of low sodium deli ham, chopped

½ cup shredded cheddar cheese

¼ cup water Salt and pepper to taste Pam® cooking spray oil

1. Spray a light coating of Pam cooking spray oil on the bottom of a skillet.
2. Heat the chopped ham through and then transfer to a plate.
3. Separate the eggs, placing the yolks in a medium size bowl and the egg whites in another bowl.
4. Mix the egg yolks with the water and beat until fluffy.
5. Beat the egg whites until they are foamy and stiff.
6. Fold the egg yolks into the egg white.
7. Re-spray your skillet with Pam cooking spray oil and put skillet on low heat.
8. Pour in the egg mixture and spread evenly over the bottom of the skillet.
9. Sprinkle the ham and cheese over the top of the mixture.
10. Cover and cook until the eggs are cooked through and fluffy, approximately 25 minutes.

Baked Cod Fish with Lemon and Olive Oil (Serves 4) INGREDIENTS:

4 cod fillets, approximately

4 ounces each

1 Tablespoon freshly squeezed lemon juice

1 Tablespoon olive oil

¼ cup garlic powder

½ teaspoon dried thyme

¼ sweet paprika

1. Preheat the oven to 400 degrees F.
2. Arrange the fish in a baking dish.
3. Drizzle fish with lemon juice and olive oil.
4. Sprinkle with garlic powder, dried thyme and paprika.
5. Bake until fish is opaque and juicy.
6. Spoon pan juices over top and serve.

Baked Whole Fish in Foil (Serves 1 to 2 depending on fish size) INGREDIENTS:

1 whole fish such as snapper, trout, orange roughy, cleaned and washed

1 lemon, sliced Juice of

1 fresh lemon

1/4 teaspoon dried parsley

1/4 teaspoon dried thyme

1 tablespoon of olive oil

Aluminum foil and roasting pan

1. Preheat oven to 400 degrees F.
2. Line roasting pan with aluminum foil and add fish.
3. Sprinkle fish with olive oil, parsley and thyme.
4. Place lemon slices on top of fish.
5. Pour fresh lemon juice over fish.
6. Cover and cook in oven until cooked, approximately 20–25 minutes depending on thickness of fish.

Banana Flavored Protein Shake (Serves 1) INGREDIENTS:

1 cup plain, low fat yogurt

1 cup lactose free skim milk

1 teaspoon banana extract (found in the spice section of supermarket)

1 package of unflavored whey protein powder

Ice cubes

1–2 packets of sugar substitute like Splenda® or NutraSweet®

1. In a blender, combine, ice cubes and milk and whiz until ice is thoroughly crushed.
2. Add the yogurt, banana extract and whey protein powder into the blender.
3. Whiz all together until thick and frothy.
4. Drink slowly.

Mint-infused Black Tea INGREDIENTS:

1 quart of water

3 bags of decaffeinated Darjeeling, Oolong or Black tea

3 tablespoons of coarsely chopped fresh mint, spearmint or peppermint

1–2 packets of sugar substitute

1. Boil water in saucepan.
2. Add the tea bags, chopped mint and sugar substitute.
3. Steep for 3–5 minutes.
4. Strain into mugs.
5. Drink slowly.

Cooking terms

Roasting: Food is placed in a hot oven and the food is surrounded by hot, dry heat

Grilling: Food is placed over a heat source, that is open to air

Barbecuing: A combination of covered grilling and smoking

Broiling: Food is placed under a heat source, such as the broiler setting of the oven

Braising: Simmering foods in a small amount of fluid

Poaching: Immersing foods in a fluid that is heated to a gentle simmer, but not boiled

Sauteing: Placing food in a hot pan to quickly brown and cook food

Steaming: Similar to poaching, except that the fluid is usually water and in the form of gas

Boiling/Blanching: Cooking food in hot water

Bake: To cook food, uncovered in an oven with a small amount of liquid or fat

Cooking measurement conversions

1/4 tsp = 1ml	1oz = 30g
1/2 TSP = 2 ml	2OZ = 60g
1 tsp = 5 ml	4oz = 1/4 lb = 115g
1Tbsp = 15ml = 3 tsp	8oz = 1/2 lb = 230g
2 Tbsp = 30ml = 1oz	12oz = 3/4 lb = 340g
1/4 cup =120ml = 2oz	16oz = 1 lb = 455g
1/2 cup = 120ml = 4oz	2.2 lbs = 1 kg
3/4 cup = 180ml = 6oz	
1 cup = 240ml = 8oz	

Estimate of standard proportions

HOUSEHOLD ITEMS	SIZE (APPROXIMATE)
Tip of thumb to the first joint	1 teaspoon (tsp) = 5ml
Golf ball	1 tablespoon (Tbsp) = 15ml
Computer mouse	1/2 cup (4oz)
Match Box	1 ounce
CD disc	1 ounce slice
2 Dominos	1 ounce
Tube of lipstick	1 ounce
Deck of poker cards	3 ounces
Tennis ball	2/3 cup, “medium” size fruit

These are approximate measurements.

For accurate measurements, use standard measuring utensils.

PHASE IV:

High Protein Foods, Added Vegetables

Duration of Phase IV: Until you reach goal weight or at the instruction of our registered dietitian.

- Phase IV may begin once Phase III is well tolerated, but not before 2 months post-surgery.
- The goal is to consume at least 60-80 grams of protein per day with the addition of adding vegetables.
- Inadequate protein intake can lead to fatigue, loss of lean body mass and increase your risk of infection and other illnesses.
- Consume 3-4 ounces of protein 3 times per day (3-4 ounces for breakfast; 3-4 ounces for lunch; 3-4 ounces for dinner).
- As an estimate, 1 ounce of protein is approximately 7 grams. For example, if you consume 3 ounces of chicken, this would equal approximately 21 grams of protein.
- Always eat your protein foods first before eating the vegetable.
- Do not begin eating your vegetable first. Vegetables contain little or no protein and protein is essential.
- Continue to consume sugar-free, non-carbonated, decaffeinated clear liquids in between high protein foods for a total of 64 ounces (8 cups) per day/
- Follow the "30-Minute Rule" to fluid intake: wait 30 minutes before and after your food to drink fluids.

Important considerations about adding vegetables

- When incorporating vegetables, it is recommended that you begin with softly cooked vegetables first.
- Avoid vegetables that do not become soft when cooked.
- Avoid fibrous stalks like those found in asparagus, broccoli, celery, stalks of romaine lettuce, kale, etc.
- Be cautious of seeds and peels.
- You may introduce raw vegetables only after you can tolerate a variety of cooked vegetables.
- Remember to always check for food tolerance.
- Slowly increase your variety of choices only after you know that you can tolerate it.
- When eating raw vegetables, it is recommended that you first try softer vegetables such as broccoli florets, Bibb lettuce, red-leaf lettuce or Boston lettuce.
- Remember to chew vegetables thoroughly (chew 25 times) and swallow only when chewing has made it into a "mushy" pureed consistency.
- If you have trouble with gas, avoid eating gas-producing vegetables such as onions, cauliflower, garlic, scallions, leeks, Brussels sprouts and cabbage.
- Avoid starchy vegetables such as potatoes (sweet and white), yams, yucca, plantain and corn at this time.
- Continue with vitamin and mineral supplementation.

Nutritional considerations

- Stop eating or drinking when you feel the sense of fullness.
  - During Phase IV, no breads, no cereals, no rice, no noodles, no pastas, no crackers, no potatoes (sweet or white), no yams, no corn, no plantain, no yucca, no fruits, no fruit juices, no carbonation, no caffeine, no alcoholic beverages.

Menu sample

Morning: Decaffeinated coffee with Splenda® may be used; Wait at least 30 minutes after consuming fluids before eating protein foods
Breakfast: 4 ounces Eggbeaters® omelet with sautéed mushrooms, scallions and cheese
Midmorning: 8 oz Crystal Light®
Lunch: 1 Boca Burger®, steamed broccoli
Mid-afternoon: 8 oz Crystal Light®
Dinner: 3–4 ounces baked tilapia fish, steamed cauliflower florets
Evening: 8 oz Crystal Light®

Exercise – sample workout

Post-op, month 2

EXERCISE	TIME	FREQUENCY	INTENSITY
Walk or start other cardio exercises; swimming, rowing, aerobics, stair climbing with surgeon's approval.	30-45 Minutes	5-6 times/week	Add a 3rd day of light weight training alternating upper and lower body, 15-30 minutes, as tolerated.

PHASE V:

High Protein Foods, Added Complex Carbohydrates in the Form of Whole Grains, Starchy Vegetables and Fruit

Duration of Phase V: Lifetime

- Phase V can be initiated at the recommendation of your Registered Dietitian. This may take anywhere from 6–12 months or longer after surgery.
- For example, if your excess weight is 100 lbs and you lose 75 lbs, you may add complex carbohydrates back into your meal plan.
- If you are unsure when to add complex carbohydrates back into your meal plan, please consult with the doctor or dietitian.
- The goal remains to consume at least 60–80 grams of protein per day with the addition of vegetables, fruit and complex carbohydrates.
- Inadequate protein intake can lead to fatigue, loss of lean body mass and increase your risk of infection and other illnesses.
- Consume 3–4 ounces of protein 3 times per day (3–4 ounces for breakfast; 3–4 ounces for lunch; 3–4 ounces for dinner)
- As an estimate, 1 ounce of protein is approximately 7 grams. For example, if you consume 3 ounces of chicken, this would equal approximately 21 grams of protein.
- Always eat your protein foods first before eating the vegetable, fruit or complex carbohydrate.
- Do not begin eating your complex carbohydrate first. They contain little or no protein and protein is essential.
- Continue to consume sugar-free, non-carbonated, decaffeinated clear liquids in between high protein foods for a total of 64 ounces (8 cups) per day.
- Follow the "30-Minute Rule" to fluid intake: wait 30 minutes before and after your food to drink fluids.

Important considerations about complex carbohydrates

- Complex carbohydrates are found in whole grains, fruits, legumes and vegetables.
- Up until Phase V, you may have been eating legumes and vegetables. Now you may consider whole grains, starchy vegetables and fruit.
- When incorporating complex carbohydrates, it is recommended that you begin with peeled fruit, either cooked or raw.
- No-added sugar and syrup canned fruit is acceptable.
- Remember to always check for food tolerance.
- Slowly increase your variety of choices only after you know that you can tolerate it.
- Fruit juice and sweetened beverages are not recommended.
- Avoid white flours, rice, pastas or breads that are "doughy" or "gummy". These are hard to tolerate.
- When choosing whole grains, choose 100% whole wheat, 100% multigrain. These are packed with fiber, vitamins and minerals.
- Limit complex carbohydrates and remember to always consume your protein first.

Nutritional Considerations

- You may continue to use protein shakes as a meal replacement if you find that you cannot consume enough protein.
- Do not skip meals; have 3 meals per day (breakfast, lunch and dinner).

Complex carbohydrates

TYPE	EXAMPLES
Cereals and Grains	Amaranth, bran, barley, brown rice, bulgur, buckwheat, cornmeal, grits, kasha, kamut, millet, muesli, oats, quinoa, rye, semolina, 100% whole wheat, wheat germ and wild rice. When choosing a cereal, choose one that has less than 5 grams of sugar per serving and has at least 5 grams of fiber per serving.
Breads, Crackers, Pitas, Tortillas, Pastas and Rice	Look for 100% whole grain, stone-ground, multigrain or 100% whole wheat breads, crackers and pastas. Ezekiel and Spelt breads, Arnold's Whole grain Classic, Pepperidge Farms Whole Grain. Crackers such as Wasa, Ryvita, Kalvi and Kasi brands. Pastas such as Ronzoni Healthy Harvest, Barila Plus, Mueller's Whole Grain. Rice brands such as: Tex-Mex brown rice, Eden Foods whole grain rice, Lundberg's brown rice, Success whole grain brown rice and Uncle Ben's brown or wild rice.
Starchy Vegetables	Corn, peas, plantain, potato (sweet or white), yams, squash or yucca.
Legumes and Beans	Soybeans (edamame), lentils, peas. Beans such as black, red, white, navy, northern, kidney or lima. Soak dried beans over night to reduce gas production.

TYPE	EXAMPLES
Vegetables	Use fresh or frozen without added sauces, cheese or gravies. Good examples of vegetables are: broccoli and cauliflower florets, tender green beans, soft yellow squash, zucchini, soft eggplant, cucumbers, soft asparagus, Brussels sprouts, carrots, parsnips, rutabaga, beets,, snow peas, plantain, potato (sweet or white), yams, yucca, sweet leeks, scallions, shallots, onions, green beans, peas, corn, lettuce, creamed spinach, kale, collards, cabbage, legumes, squash, mushrooms, peppers, tomatoes, herbs like parsley, basil, thyme, and sage. If using canned, choose low sodium and rinse under cool water. Avoid tough stalks and vegetables that are too fibrous or hard to chew. If experiencing gas, avoid onions, garlic leeks, cabbage, broccoli, cauliflower and other gas producing vegetables.
Fruits	Use fresh or frozen without added sugar, syrup or cream. Always wash your fresh fruit under cool running water. Peel fresh fruit. Good examples of fresh fruit are: peaches, apples, nectarines, plums, cherries, strawberries, apricots, blueberries, melons, bananas, grapes, figs, papaya, mangos, avocados, pears, persimmons. Avoid fruit that is too fibrous or hard to chew such as coconut and the rind of the orange. It's recommended that you peel fresh fruit before eating. Use caution when eating fruits with seeds or pits. If using canned fruit, choose sugar-free or no sugar added and syrup.

6. After Weight Loss Surgery

- Hospital Post Op
- Potential Problems
- Food Diary fill in
- Weight Chart fill in
- Things to Remember for a Lifetime After Weight Loss Surgery

Hospital Post-Op

Soon after your return to your room after surgery most patients will be able to sip water.

- Sip slowly, do not gulp.
- Do not use a straw.
- If water is well tolerated with no nausea or vomiting, Phase I of the Bariatric Eating Plan may begin.

Exercise

POST-OP AT THE HOSPITAL

Walk in the room or around the hospital floor 2–3 times a day

Potential Problems

POSSIBLE OCCURRENCE	MAY BE CAUSED BY	POSSIBLE SOLUTION
Constipation	Having a bowel movement every 3 days after surgery is a normal occurrence. Constipation may also be caused by less total food intake, inadequate fluid intake, high protein, low fiber intake. Some vitamins, minerals or medications may also cause constipation. Inactivity may lead to constipation.	Stay well hydrated. Fluid intake should be at least 64 ounces per day. If constipated, try to increase fluid intake with an additional 8–10 cups per day. Continue eating proteins, and taking vitamins, minerals and medications as directed. You may use over the counter laxatives, fibers or stool softeners such as Milk of Magnesia®, Benefiber®, Metamucil®, Senokot® or Colace®. If constipation persists, contact your physician.
Dumping Syndrome	This may be caused by high sugar in the Gastric Bypass procedure.	Avoid sugars, fried foods and high fat foods. Stay well hydrated. Fluid intake should be at least 64 ounces per day.
Diarrhea	This may occur during the liquid protein phase of your diet plan. Diarrhea may also be caused by low fiber intake, lactose intolerance, food allergy, high sugar or fat intake or food borne illness.	Stay well hydrated. Fluid intake should be at least 64 ounces per day. Switch to lactose-free milk, always check for food tolerances. Limit sugar intake to no more than 5 grams per serving. Avoid fried food and high fat. Do not eat food that you are allergic to. Always cook, cool and store your food appropriately to avoid food spoilage and food borne illness. Using bulking fibers such as Benefiber® may help. If diarrhea persists, contact your physician.
Vomiting	This may be caused by eating too fast, not chewing well, swallowing large pieces of food, a food intolerance or food borne illness, or overeating. If vomiting persists, this may be due to a stricture or stenosis. Call the office to make an appointment with the physician.	Cut food into small pieces and chew at least 25 times before swallowing. Swallow food only after it has been made “mushy” in your mouth. Always check for food tolerances. Stop eating the food which makes you vomit. Always cook, cool and store your food appropriately to avoid food spoilage and food borne illness. Don’t overeat. If vomiting persists, contact your physician.
Nausea	Having nausea is a common occurrence after surgery. This feeling is not permanent. Food intolerances, dehydration or sensory changes may also cause feelings of nausea. Some vitamins and minerals may cause nausea.	Stay well hydrated. Fluid intake should be at least 64 ounces per day. Always check for food tolerances. Avoid extreme temperatures of hot and cold. This may trigger nausea. Do not skip meals, vitamins and minerals. You can also try medications like Zofran, which your surgeon will prescribe if needed. If nausea progresses into vomiting, see above.

POSSIBLE OCCURRENCE	MAY BE CAUSED BY	POSSIBLE SOLUTION
Pain After Eating or Drinking	This may be caused by eating too fast, not chewing well and swallowing large pieces of food. Pain may also be caused by overeating or drinking carbonated or caffeinated beverages. If pain persists, call the office to make an appointment with the physician.	Cut food into small pieces and chew at least 25 times before swallowing. Swallow food only after it has been made "mushy" in your mouth. Stop eating when you feel the sense of fullness and restriction. Do not overeat. Avoid all carbonated and caffeinated beverages.
Gas	This may be caused by eating too fast, drinking carbonated beverages, or eating gas-producing foods such as legumes (beans), broccoli, onions, cabbage or Brussels sprouts.	Slow down. Do not eat fast. Avoid all carbonated beverages. Soak beans in cool water overnight to reduce gas-producing enzymes in legumes. Temporarily avoid gas-producing vegetables. You may take anti-gas medications such as Beano® or Mylicon®.
Vitamin or Mineral Deficiency	This may be caused by malabsorption of nutrients and not taking the recommended types, dosage or timing of the recommended vitamin and mineral regimen.	Adhere to the recommended vitamin and mineral protocol. Have your blood work done so the physician and nutritionist can assess your vitamin and mineral levels. If you have any questions about vitamins and minerals, contact your physician or nutritionist.
Sensory Changes (Taste and Smell)	This is common after surgery. Although the physiological mechanism is unknown, sensory changes may be exacerbated by strong food odors, spicy foods or extreme temperatures of hot or cold.	Do not skip meals and stay well hydrated with alternative food selections.
Lactose Intolerance	This is common in patients who have had surgery. Lactose intolerance means that you cannot digest the lactose found in milk and dairy products. Lactose is a natural sugar found in milk.	This is common in patients who have had surgery. Lactose intolerance means that you cannot digest the lactose found in milk and dairy products. Lactose is a natural sugar found in milk.

Food Diary

Day _____ Date _____

FOOD ITEM	AMOUNT	PROTEIN (GRAMS)	CALORIES	FLUID (OUNCES)
TOTALS:				
MY GOALS:				

Today I took:

- ☐ Multivitamin
- ☐ Calcium citrate, 500 mg x 3/day + 1200-1500 mg (Gastric Bypass)
- ☐ Vitamin B12, 500mcg sublingual
- ☐ Iron, 45-60 mg with vitamin C, 500 mg
- ☐ Vitamin B Complex

Weight Chart

Name: _____

Height: _____ Weight Before Surgery: _____ BMI: _____ Weight Goal: _____

TIME	DATE	WEIGHT	WEIGHT LOSS	BMI
Nutrition Consultation				
Pre-op Visit				
2 Weeks Post-op				
2-3 months Post-op				
6 Months Post-op				
1 Year Post-op				
Weigh yourself at least once weekly and record it				
Week 1 Post-op				
Week 2				
Week 3				
MONTH 1				
Week 5				
Week 6				
Week 7				
MONTH 2				
Week 9				
Week 10				
Week 11				
MONTH 3				
Week 13				
Week 14				
Week 15				
MONTH 4				
Week 17				
Week 18				
Week 19				
MONTH 5				

Things to Remember For a Lifetime After Bariatric Surgery

1. Always eat your protein first. Even after you have progressed through the dietary phases, consume your proteins first before any other food item. When you feel full, stop eating.
2. When you feel full, stop eating and do not eat again until the next meal of the day. Do not over-eat.
3. Always follow the "30-Minute Rule" to fluid intake: Do not drink with your meals. You must stop drinking 30 minutes before you eat and wait 30 minutes after you have eaten to resume fluid in-take.
4. Consume at least 60–80 grams of protein per day (or more if recommended by your MD or RD).
5. Take your vitamin and mineral supplements every day unless otherwise instructed by the doctor or dietitian.
6. Consume at least 64 ounces (8 cups) of non-carbonated, sugar-free, caffeine-free fluid per day. Do not wait until you feel thirsty before you drink.
7. Keep your scheduled follow-up appointments. Don't forget to get your blood work done so an assessment of your vitamin and mineral levels can be done.
8. Avoid sugar. Have no more than 5 grams of sugar per serving.
9. Avoid caffeine. Although some patients may be able to tolerate caffeine after 3 months, it is recommended that you either decrease your intake or eliminate it altogether.
10. Avoid alcohol
11. Do not skip meals. Have 3 meals per day: breakfast, lunch and dinner.
12. Sip fluids slowly throughout the day. Do not gulp. Do not use a straw.
13. Do not chew/swallow gum.
14. Take small bites of food and chew properly (25 times) before swallowing. Food should be a "mushy"before you swallow.
15. Always check your tolerance level for foods. If a food doesn't agree with you, stop eating it and try again at another time. If that particular food continues to be intolerable, discontinue eating it altogether.
16. Always check with your Primary Care Physician about taking medications and/or over-the counter medications.
17. Be physically active everyday.
18. Participate in support group meetings.
19. Call the dietitian with any nutrition questions or concerns.
20. Remember, bariatric surgery is not the cure for obesity. **It is a tool that can assist you with weight loss management.**

7. Continuing Education

- Websites
- Weight Loss Surgery Articles

Websites

OBESITY AND BARIATRIC RESOURCE INFORMATION

Educational websites

www.AmericanHeart.org www.asmbs.org

www.bsciresourcecenter.com
(formerly Bariatric Support Center)

www.ccf.org

www.cdc.gov

www.eatright.org

www.fda.gov

www.FoodSafety.gov

www.liteandhope.com

www.MyPlate.gov

www.niddk.nih.gov

www.Nutrition.gov

www.obesity.org

www.obesityaction.com

www.obesitydiscussion.com

www.obesityhelp.com

www.soard.com

www.wlshelp.com

Bariatric products websites

www.bariatricadvantage.com

www.bariatricchoice.com

www.bariatricfoodproducts.com

www.bariatricfusion.com

www.bluebonnetnutrition.com

www.bodybuilding.com

www.bulknutrition.com

www.carbessentials.net

www.celebratevitamins.com

www.cvs.com

www.designerwhey.com

www.dietdirect.com

www.eas.com

www.gnc.com

www.houseofnutrition.com

www.naturesbest.com

www.nutritionexpress.com

www.unjury.com

www.vitacost.com

www.vitaminshoppe.com

www.walgreens.com

www.wholefoodsmarket.com

Weight Loss Surgery Articles

Books and magazines

The Emotional First + Aid Kit: A Practical Guide to Life After Bariatric Surgery
by Cynthia L. Alexander, PsyD

Gastric Bypass Surgery
by Mary McGowan

Getting to Goal and Staying There: Lessons from Successful Patients
by Terry Simpson, MD

Eating Well After Weight Loss Surgery – The Delicious Way to Eat in the Months and Years After Surgery
by Pat Levine, William B. Inabnet and Meredith Urban

Tiny Bites: A Guide to Gastric Surgery for the Morbidly Obese
by Saundra Beauchamp-Parke

Exodus From Obesity: Guide to Long-Term Success After Weight Loss Surgery
by Paula F. Peck, RN

The Doctor's Guide to Weight Loss Surgery
by Louis Flancbaum, MD, and Erica Manfred

Weight Loss Surgery for Dummies
by Marina S. Kurian, MD, Barbara Thompson, Brian Davidson and Al Roker

8. Lodging

› Lodging

Lodging

The InterContinental Suites Hotel

Located on the Cleveland Clinic main campus, the newly redesigned InterContinental Suites Hotel offers the only "wellness focused" hotel in Cleveland seeking to create an oasis for our guests to relax, rejuvenate and improve their overall mental and physical well-being. All new one- and two-bedroom non-smoking suites have been specifically designed to provide a comfortable, stress-free stay including:

Spacious living and dining room areas with queen sofa beds and recliner chairs

Refrigerator/freezer, microwave, coffee makers and wet bar

iHome radios that connect to iPod or MP3 players

Upgrades to bath amenities

37" flat screen HD plasma televisions

C2 restaurant, bar and lounge – Mediterranean inspired cultural cuisine along with classic American favorites

Wi-Fi lounge features complimentary high speed internet access

Ambassador floor – upgraded amenities and services

PURE allergy friendly rooms – specially designed for allergy-afflicted travelers

LOCATION:

8800 Euclid Avenue, Cleveland, OH 44106

Hours: 24 hours | Phone: 216.707.4300

Reservations Only: Toll-free: 877.707.8999

Holiday Inn Cleveland Clinic

Located on the Cleveland Clinic main campus, travelers to the new Holiday Inn Cleveland Clinic appreciate our finer touches that make comfort and convenience a top priority.

Guest rooms feature:

43" flat screen HD Plasma televisions

Complimentary wireless high-speed Internet access

Spacious and well-appointed work space

Refrigerator/freezer

In-room safe

Coffee maker

Recliner chair or chair/ottoman

Studio Suites also offer:

Wet Bar

Microwave

Additional amenities and services include indoor pool, whirlpool, fitness center, media lounge, Market 24 "grab & go", Mocé Cafe and Bar, seasonal outdoor patio dining, valet dry-cleaning and self-service guest laundry.

LOCATION:

8650 Euclid Avenue, Cleveland, OH 44106

Hours: 24 hours Phone: 216.707.4200

Reservations Only: Toll-free: 844.748.2877

OTHER PREFERRED PARTNER LOCATIONS

Crowne Plaza Cleveland South - Independence

LOCATION:

5300 Rockside Rd., Independence, OH 44131
Hours: 24 hours
Reservations Only: Toll-free: 866.840.0582
Distance: 11 miles from Cleveland Clinic's Main Campus

Holiday Inn Cleveland South - Independence

LOCATION:

6001 Rockside Rd., Independence, OH 44131
Hours: 24 hours
Reservations Only: Toll-free: 800.465.4329
Distance: 11.2 Miles from Cleveland Clinic's Main Campus

HOTELS WITH SPECIAL RATES

The following hotels will provide special Cleveland Clinic rates for our patients and their families.

PLEASE NOTE: When calling to make a reservation at any of these hotels, inform them you are a Cleveland Clinic patient so as to get the special Cleveland Clinic rate.

DoubleTree by Hilton – The Tudor Arms Hotel

LOCATION:

10660 Carnegie Ave., Cleveland, OH 44106
Phone: 216.455.1260
Distance: 0.4 miles from Cleveland Clinic's Main Campus

Courtyard by Marriott University Circle

LOCATION:

2021 Cornell Rd., Cleveland, OH 44106
Phone: 216.791.5678

Distance: 1.3 miles from Cleveland Clinic's Main Campus

Hilton Garden Inn Cleveland Downtown

LOCATION:

1100 Carnegie Ave., Cleveland, OH 44115
Phone: 216.658.6400
Distance: 3.1 miles from Cleveland Clinic's Main Campus

Wyndham Cleveland at Playhouse Square

LOCATION:

1260 Euclid Ave., Cleveland, OH 44115
Phone: 216.615.7500
Distance: 3.2 miles from Cleveland Clinic's Main Campus

DoubleTree by Hilton Cleveland Downtown – Lakeside

LOCATION:

Cleveland - Downtown Lakeside
1111 Lakeside Ave. E., Cleveland, OH 44114
Phone: 216.241.5100
Distance: 3.6 miles from Cleveland Clinic's Main Campus

Glidden House

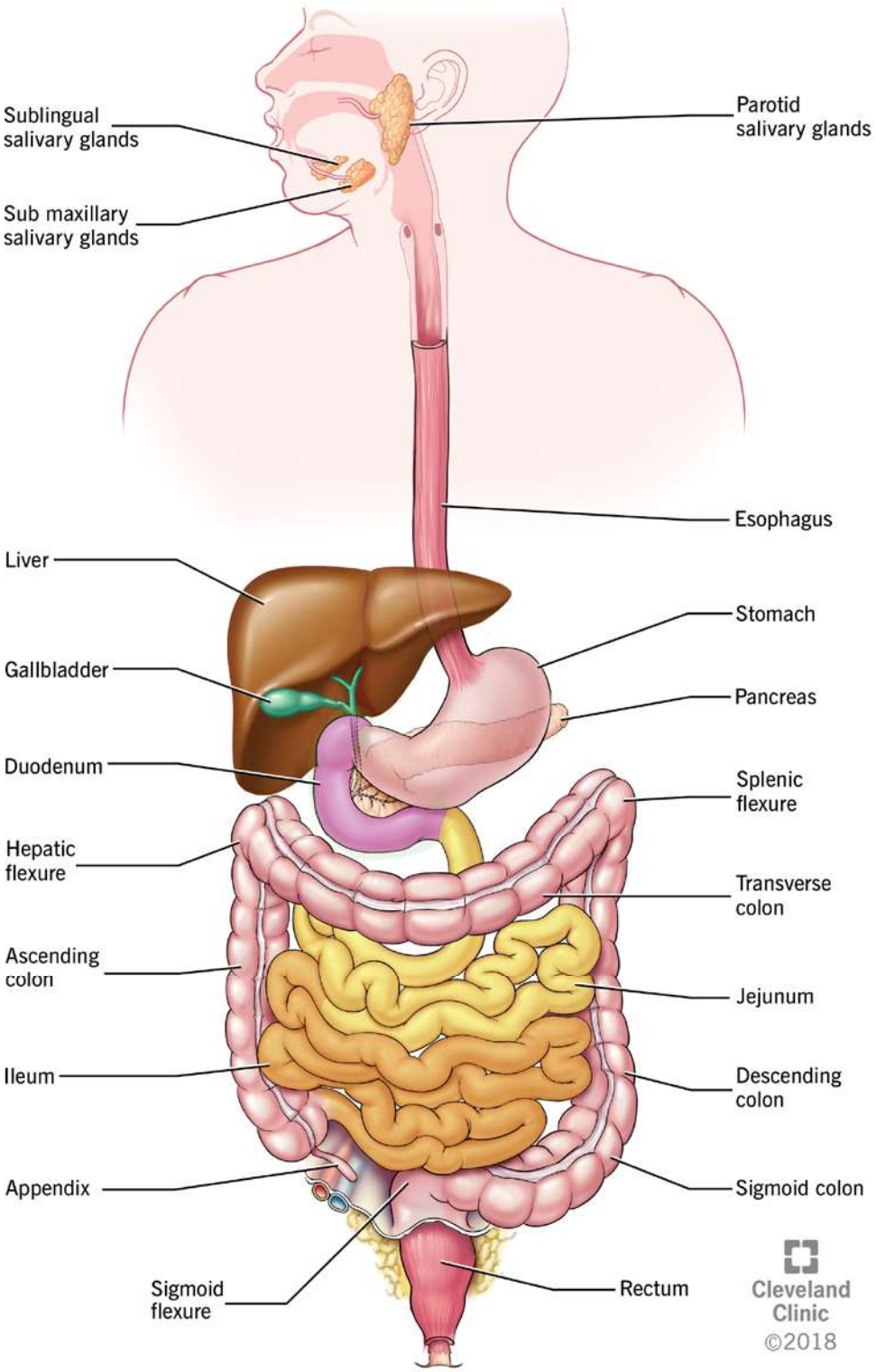
LOCATION:

1901 Ford Drive, Cleveland, OH 44106
Reservations Only: 216.231.8900
Distance: 1 mile from Campus in the University Circle Community. Within walking distance to museums and Severance Hall.

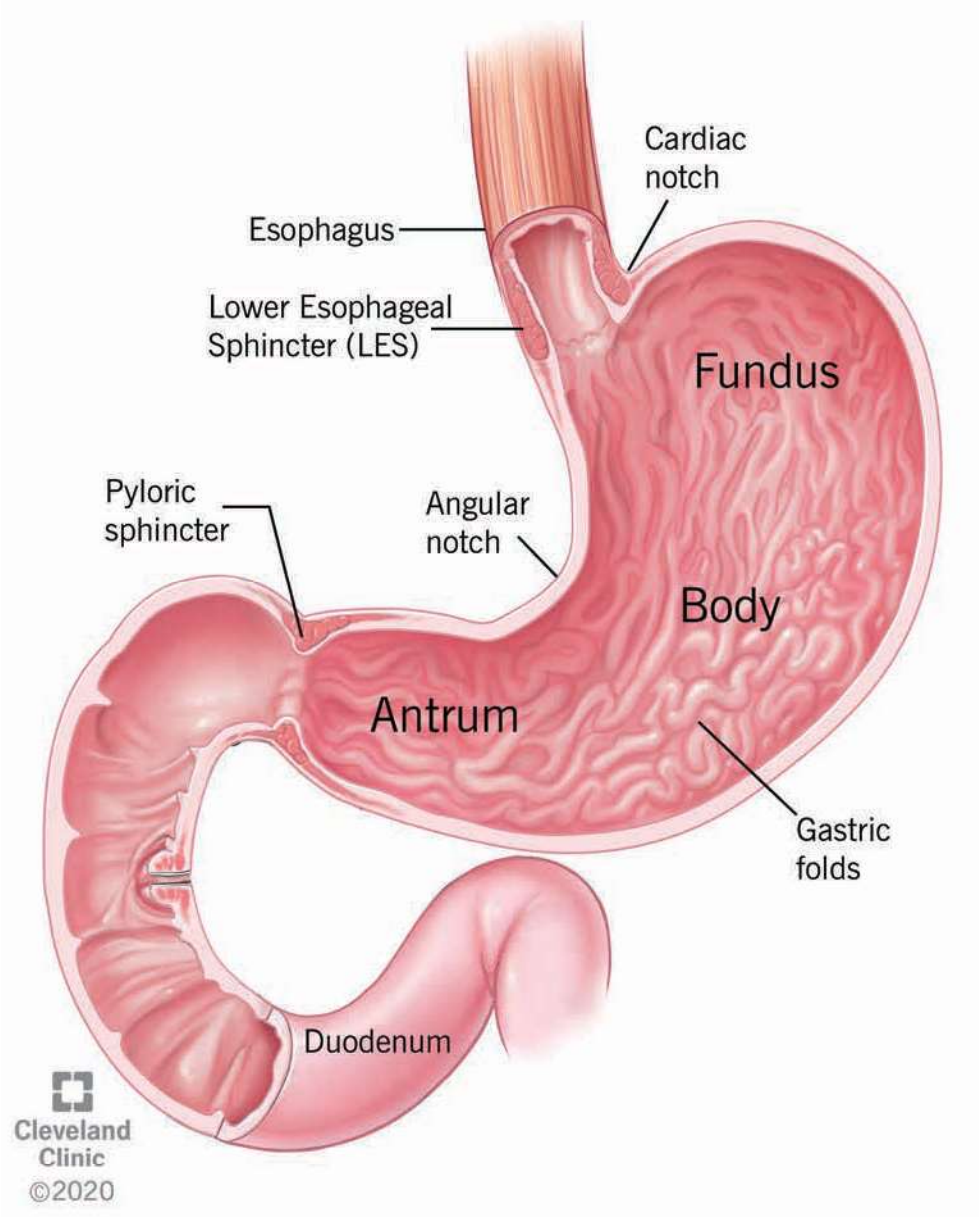
9. Glossary of Terms and Diagrams

- Anatomy of the Gastrointestinal System
- Gastrointestinal Anatomy
- Procedures
- Appointment Types
- Glossary of Terms

Anatomy of the Gastrointestinal System

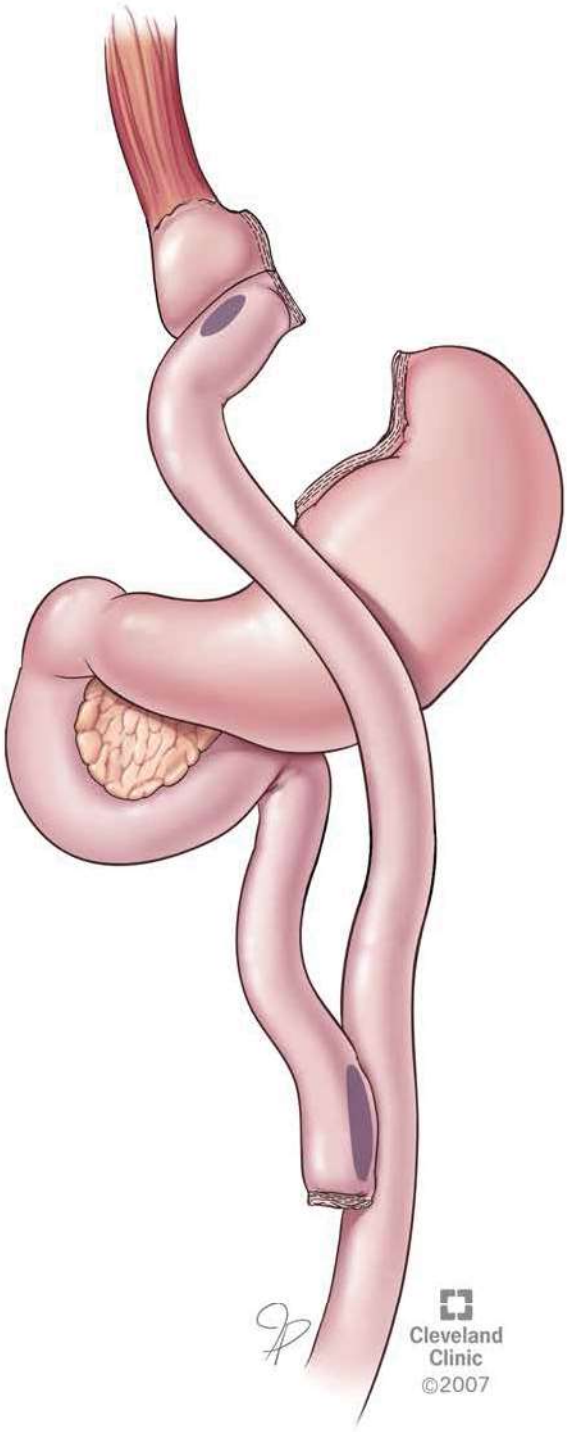


Gastrointestinal Anatomy

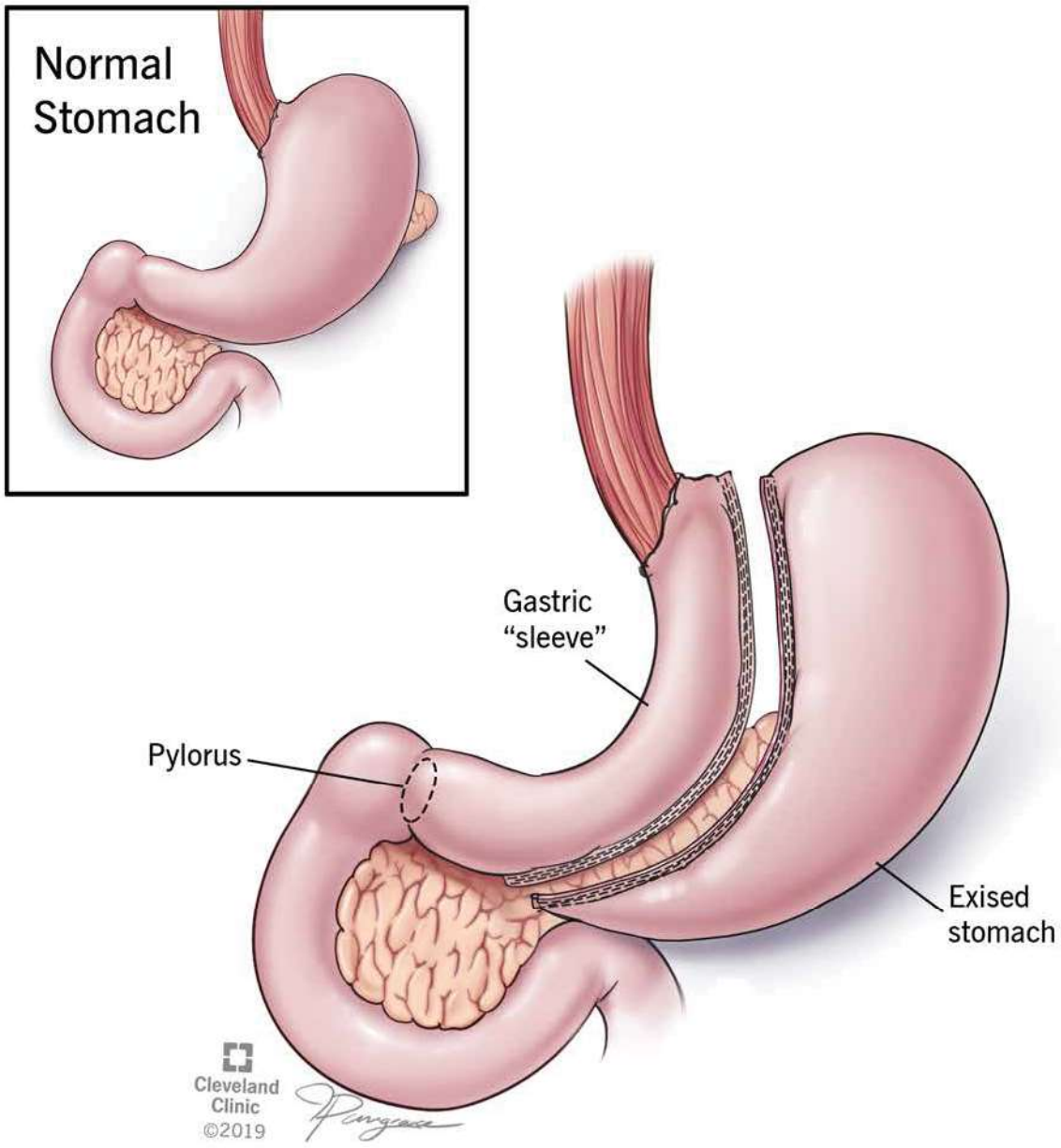


Procedures

Roux-en-Y Gastric Bypass



Sleeve Gastrectomy (SG)



Appointment Types

While working with the BMI both before and after your surgery you will experience several types of appointments.

Depending on your visit type and location, some appointments may be set up virtually through MyChart.

Besides the regular one-on-one appointments we also utilize group appointments which we call Shared Medical Appointments or SMAs. These types of visits allow interaction with other patients experiencing the same things you do.

Following bariatric surgery, patients need to schedule follow-up appointments at 3, 6, 12 and 18 months, additional 9 and 15 month visits are required for Clinic employees. These visit are extremely important for your welfare and health due to rapid changes that follows these surgeries.

Shared Medical Appointments (SMA)

What are they?

SMA's are routine follow-up appointments in a group setting. Not only are you getting your needed questions answered but you may find that you are not the only one with that question. SMA's are visits with a support group feel. SMA's also allow patients a greater variety of when they can be seen.

The BMI (Bariatric and Metabolic Institute) has several group type appointments:

- SNA- Shared Nutrition Appointments, run by a dietitian.
- SMA- Shared Medical Appointment, run by both a clinician and dietitian.
- SPA- Shared Psychology Appointment- Run by our staff psychologists.

Our patients have found this style of appointment invaluable and very reassuring to their concerns.

If you feel you would be more comfortable with an individual appointment, those can be scheduled as well.

IMPORTANT:

Once these appointments are scheduled it is extremely important that they are kept. Not keeping appointments is the number one reason this process takes so long or and many people just give up on surgery altogether.

If you cannot keep your appointments, please, be considerate and let us know 48 hours BEFORE your scheduled appointment so we may offer the visit to another patient.

Thank you.

Glossary of Terms

Abdominoperineal resection:
Surgical removal of the anus, rectum and sigmoid colon, resulting in the need for a permanent colostomy.

Adenoma:
Glandular lesion thought to be the precursor to colorectal cancer.

Adhesion:
A band of scar tissue that connects two surfaces of the body that are normally separate.

Air contrast barium enema:
An X-ray examination of the entire large intestine (colon) and rectum in which barium and air are introduced gradually into the colon by a rectal tube. This test is recommended along with flexible sigmoidoscopy every five years, starting at age 50, to screen for colorectal cancer and polyps.

Anal fissure:
A split or crack in the lining of the anal opening, usually caused by the passage of very hard or watery stools.

Anastomosis:
A surgical joining of two ducts, blood vessels or bowel segments to allow flow from one to the other.

Aneurysm:
The abnormal enlargement or bulging of a blood vessel, caused by damage or weakness in the blood vessel wall.

Angiogram:
A technique that uses dye to highlight blood vessels.

Anus:
The opening at one end of the digestive tract from which waste is expelled.

Appendectomy:
Surgical removal of the appendix to treat appendicitis.

Appendicitis:
Inflammation of the appendix that requires immediate medical attention.

Appendix:
A small, finger-like tube located where the large and small intestine join. It has no known function.

Ascites:
Fluid in the abdomen.

Banding:
A technique via endoscopy that the dilated blood vessels in the esophagus can be removed by putting rubber bands on and eventually fall off to the disappearance of those vessels.

Barium:
A substance that, when swallowed or given rectally as an enema, makes the digestive tract visible on X-rays (also referred to as a “contrast medium”).

Biliary system:
The gall bladder and bile ducts.

Biopsy:
Removal of a sample of tissue for study, usually under a microscope.

Cannulas:
Tubes which hold the laparoscope and instruments, and allow access to the abdominal cavity for performance of laparoscopic surgery.

Carcinoma:
Malignant (cancerous) growth that tends to invade surrounding tissue and metastasize (travel to and grow in) to other regions of the body. The tumor is firm, irregular and nodular with a well-defined border.

CAT scan:
Computerized axial tomography, an X-ray technique that produces a film showing a detailed cross-section of tissue.

Celiac disease:
Digestive disease that damages the small intestine and prevents the proper absorption of nutrients from food. Celiac disease occurs when the body reacts abnormally to gluten, a protein found in wheat, rye, barley and oats. Gluten causes an inflammatory response in the small intestine.

Cholecystectomy:
Surgical procedure used to remove gallstones from the gallbladder.

Cholecystitis:
An inflammation of the gallbladder.

Cirrhosis:
A slowly progressing disease in which healthy liver tissue is replaced with scar tissue, eventually preventing the liver from functioning properly. The scar tissue blocks the flow of blood through the liver and slows the processing of nutrients, hormones, drugs and naturally produced toxins. It also slows the production of proteins and other substances made by the liver.

Clinical trial:
A research program conducted with patients to evaluate a new medical treatment, drug or device.

Colectomy:
The surgical removal of part or all of the colon, performed to treat cancer of the colon or severe, chronic ulcerative colitis.

Colitis:
See ulcerative colitis.

Colon:
The last three or four feet of the intestine (except for the last eight inches, which is called the rectum). Synonymous with the "large intestine" or "large bowel."

Colon cancer:
A malignant (cancerous) tumor arising from the inner wall of the large intestine. Although the exact causes of colon cancer are not known, it appears that both hereditary and environmental factors play a role in its development. The early stages of cancer may have no symptoms. Therefore, regular screening is important.

Colonoscopy:
An outpatient procedure in which a physician inserts a colonoscope (a long, flexible instrument about 1/2 inch in diameter) in the rectum and advances it to the large intestine (colon) to view the rectum and entire colon.

Colostomy:
The surgical creation of an opening between the surface of the skin and the colon. Also referred to as a large intestine stoma.

Constipation:
Difficult, infrequent or incomplete passage of stools. Constipation is usually caused by inadequate fiber in the diet or a disruption of regular routine or diet. Constipation can also be caused by overuse of laxatives. Constipation is rarely the sign of a more serious medical condition.

Corticosteroids:
Anti-inflammatory drugs (for example, prednisone) used to treat gastrointestinal disorders such as Crohn's disease or ulcerative colitis. These powerful drugs often produce dramatic results but also cause severe side effects when used over a long period.

Crohn's disease:
A chronic inflammatory disease that involves all layers of the intestinal wall. It primarily affects the lower part of the small intestine, called the ileum, but it can affect any part of the large or small intestine, stomach or esophagus. Crohn's disease can disrupt the normal function of the bowel in a number of ways.

Diaphragm:
Thin, dome-shaped muscle that separates the abdomen from the chest. When the muscle contracts, the dome flattens, increasing the volume of the chest.

Diarrhea:
A condition in which bowel movements are passed more often than usual and in a liquid state.

Digestive diseases:
When a digestive disease occurs, it causes the malfunctioning of the digestive system, so that it is no longer turning food into fuel for energy, maintaining the body structure or eliminating waste products properly. Digestive diseases range from the occasional upset stomach, to the more life-threatening colon cancer, and encompass disorders of the gastrointestinal tract, liver, gall bladder and pancreas.

Diverticulitis:
An inflammation or infection of small sacs or outpouchings (diverticula) of the inner lining of the intestine which protrude through the intestinal wall.

Diverticulosis:
Presence of small sacs or outpouchings (diverticula) of the inner lining of the intestine which protrude through the intestinal wall. These sacs form in weakened areas of the bowel.

Edema:
Fluid retention.

Encephalopathy:
Confused thinking and forgetfulness caused by poor liver function, and the diversion of blood flow away from your liver.

Endoscopy:
A method of physical examination using a lighted, flexible instrument that allows a physician to see the inside of the digestive tract. The endoscope can be passed through the mouth or through the anus, depending on which part of the digestive tract is being examined. This method is referred to by different names depending on the area of examination, such as: esophagoscopy (esophagus), astroscopy (stomach), upper endoscopy (small intestine), sigmoidoscopy (lower part of the large intestine), and colonoscopy (entire large intestine).

Endosonography:
Also called ultrasound, is a diagnostic tool used to visualize the gastrointestinal organs. High-frequency sound waves are used to produce images and precisely identify abnormalities, such as tumors of the esophagus, stomach, pancreas or rectum. In the rectum, ultrasound can be used to locate the exact position of the tear in a muscle, even before bowel incontinence becomes a problem.

Enema:
Injection of fluid into the rectum and colon to induce a bowel movement.

Epidural catheter:
A small tube (catheter) passed into the space between the spinal cord and spinal column. Pain medication is then delivered through the tube, numbing the lower abdominal area.

Esophageal manometry:
A test used to measure the strength and coordination of the esophagus during swallowing to identify the source of problems in the upper digestive system.

Esophagus:
The "food pipe" leading from the mouth to the stomach.

Familial polyposis:
A rare condition, tending to run in families, in which the moist layer of tissue lining the colon (mucosa) is covered with polyps.

Fecal diversion:
Surgical creation of an opening of part of the colon (colostomy) or small intestine (ileostomy) to the surface of the skin. The opening provides a passageway for stool to exit the body.

Fecal incontinence:
Inability to retain stool, resulting in bowel accidents.

Fecal occult blood test (FOBT):
Stool testing for blood, which is recommended every year starting at age 50, in addition to the flexible sigmoidoscopy test every five years, to screen for colon cancer and polyps.

Fistula:
An abnormal connection that forms between two internal organs or between two different parts of the intestine. This is a common complication of Crohn's disease.

Flexible sigmoidoscopy:
A routine outpatient procedure in which a physician inserts a sigmoidoscope (a long, flexible instrument about ½ inch in diameter) in the rectum and advances it to the large intestine (colon) to view the lining of the rectum and the lower third of the large intestine (sigmoid colon).

Fluoroscopy:
A continuous X-ray technique that allows the physician to observe how an organ performs its normal function; for example, how the esophagus works during swallowing.

Gallbladder:
A small pear-shaped organ located beneath the liver on the right side of the abdomen. The gallbladder's primary functions are to store and concentrate bile, and secrete bile into the small intestine to help digest food.

Gallstone:
Pieces of solid material that develop in the gall bladder when substances in the bile, primarily cholesterol, and bile pigments form hard, crystal-like particles.

Gas:
A product of digestion that is made primarily of odorless vapors — carbon dioxide, oxygen, nitrogen, hydrogen and sometimes methane. The unpleasant odor is due to bacteria in the large intestine that release small amounts of gases containing sulfur. Everyone has gas and eliminates it by burping or passing it through the rectum. In many instances people think they have too much gas, when in reality they have normal amounts. Most people produce one to three pints of intestinal gas in 24 hours, and pass gas an average of 14 times a day.

Gastrectomy:
Surgical procedure in which all or part of the stomach is removed.

Gastric:
Pertaining to the stomach.

Gastric cancer:
See stomach cancer.

Gastritis:
An inflammation of the lining of the stomach from any cause, including infection or alcohol.

Gastroesophageal reflux disease (GERD):
A condition in which acid-containing contents of the stomach travel back up into the esophagus, causing a burning sensation (heartburn).

Gastroscopy:
Procedure performed along with a biopsy to examine the stomach and esophagus using a thin, lighted tube called a gastroscope, which is passed through the mouth and into the stomach.

Heartburn:
Heartburn has nothing to do with the heart. It is an uncomfortable feeling of burning and warmth occurring in waves, rising up behind the breastbone (sternum) toward the neck. It is usually due to gastroesophageal reflux, which is the backing up of stomach acid into the esophagus.

Helicobacter pylori (H. pylori):
A bacterium believed to be a major cause of peptic ulcers.

Hemorrhoids:
Swollen blood vessels which line the anal opening, caused by excess pressure from the straining during a bowel movement, persistent diarrhea or pregnancy.

Hepatitis:
A disease in which the liver is inflamed. A viral infection is usually the cause of hepatitis, although sometimes toxins or drugs are the cause.

Hiatal hernia:
Abnormal bulge or protrusion of a portion of the stomach through a hole in the diaphragm where the esophagus and the stomach join.

Ileocolectomy:
Surgical removal of a section of the terminal ileum and colon lying close to the ileum (the lowermost part of the small intestine).

Ileostomy:
The surgical creation of an opening between the surface of the skin and the ileum, the lowermost section of the small intestine.

Incontinence (bowel):
Loss of bowel control.

Inflammatory bowel disease (IBD):
Diseases which cause inflammation of the bowel. IBD includes Crohn's disease and ulcerative colitis.

Inguinal hernia:
Abnormal bulge or protrusion that can be seen and felt in the groin area (area between the abdomen and thigh). An inguinal hernia develops when a portion of an internal organ, such as the intestine, along with fluid, bulges through a weakened area in the muscular wall of the abdomen.

Intravenous pyelogram (IVP):
A technique to evaluate the function of the urinary tract by injecting dye into the tract and then viewing its flow by X-ray.

Irritable bowel syndrome (IBS, also called spastic colon):
A condition in which the colon muscle contracts more readily and causes abdominal pain and cramps, excess gas, bloating and a change in bowel habits that alternate between diarrhea and constipation.

Jaundice:
A condition in which the skin and eyes turn yellow because of increased levels of bilirubin in the blood. This happens whenever the flow of bile from the liver to the gallbladder is blocked, when the liver is severely diseased, or when too much bilirubin is produced by excessive red blood cell destruction.

Kegel exercises:
Exercises performed to strengthen the pelvic floor muscles.

Lactase:
An enzyme that converts lactose into its more digestible simple sugar components: glucose and galactose. The lactase enzyme is available in liquid form to add to milk or in tablet form to take with solid food.

Lactose-intolerance:
The inability to digest lactose, the sugar primarily found in milk and dairy products.

Laparoscopy:
A method of surgery that is much less invasive than traditional surgery. Tiny incisions are made to create a passageway for a special instrument called a laparoscope. This thin telescopelike instrument with a miniature video camera and light source is used to transmit images to a video monitor. The surgeon watches the video screen while performing the procedure with small instruments that pass through small tubes placed in the incisions.

Large intestine:
This digestive organ is made up of the ascending (right) colon, the transverse (across) colon, the descending (left) colon, and the sigmoid (end) colon. The appendix is also part of the large intestine. The large intestine receives the liquid contents from the small intestine and absorbs the water and electrolytes from this liquid to form feces, or waste.

Laxative:
Medications that increase the action of the intestines or stimulate the addition of water to the stool to increase its bulk and ease its passage. Laxatives are often prescribed to treat constipation.

Liver:
One of the most complex and largest organs in the body, which performs more than 5,000 life sustaining functions.

Liver disease:
More than 100 types of liver disease have been identified including hepatitis, cirrhosis and liver tumors. When liver disease develops, the liver's ability to perform its metabolic, detoxification and storage functions is impaired.

Magnetic resonance imaging (MRI):
A test that produces images of the body without the use of X-rays. MRI uses a large magnet, radio waves and a computer to produce these images.

Mesentery:
Membranous tissue which carries blood vessels and lymph glands, and attaches various organs to the abdominal wall.

Nausea:
A queasy feeling which leads to stomach distress, a distaste for food and an urge to vomit. Nausea is not a disease, but a symptom of many disorders. It can be brought on by systemic illnesses such as influenza, medications, pain and inner ear disease.

Nitrates:
Substances found in some foods, especially meats, prepared by drying, smoking, salting or pickling. Nitrates are thought to be cancer-causing substances that contribute to the development of stomach cancer.

Nonsteroidal anti-inflammatory drugs (NSAIDs):
A class of drugs that are effective in reducing inflammation and pain without steroids. Examples of these drugs include aspirin, naproxen and ibuprofen.

Occult blood:
Blood in the stool that is not always visible to the naked eye. This type of bleeding is detected by performing a laboratory test on a stool sample.

Pancreas:
An organ behind the stomach next to the duodenum, the first part of the small intestine. The pancreas has two basic functions in the body. It produces enzymes that help break down (digest) food, and hormones (such as insulin) that regulate how the body stores and uses food.

Pancreatic cancer:
Growth of abnormal cells in the pancreas.

Pancreatitis:
A rare disease in which the pancreas becomes inflamed. The pancreas, a gland which produces enzymes to digest food, is located next to the duodenum and behind the stomach. The most common causes for pancreatitis are alcohol and gallstones. There are two forms of pancreatitis, acute and chronic. The acute form occurs suddenly and may be a severe, life threatening illness with many complications. Usually, the patient recovers completely. A chronic form of the disease may develop if injury to the pancreas continues, such as when a patient persists in drinking alcohol, bringing severe pain and reduced functioning of the pancreas that affects digestion and causes weight loss.

Paracentesis:
The removal of the accumulation of fluid in the abdomen.

Pathology:
The study of the characteristics, causes and effects of a disease.

PCA:
Abbreviation for Patient Controlled Analgesia. A method of administering pain medication directly into a patient's circulatory system through a vein (usually in the arm or hand) or directly to the nerves that perceive lower abdominal pain (epidural area). Delivery of pain medicine is activated by the patient pushing a request button.

Peptic ulcer disease:
A disorder in which sores or ulcers form on the tissue lining the stomach or the first part of the small intestine (duodenum).

Peristalsis:
The means by which food is propelled through the esophagus in a series of muscular contractions. This same process is used by the intestines to propel digested food and waste.

Polyps (colon):
Small, non-cancerous growths on the inner colon lining that may develop into cancer. Colon polyps and the early stages of cancer can have no symptoms. Therefore, regular screening is important.

Portal hypertension (colon):
An increase in the pressure within the portal vein (the vein that carries blood from the digestive organs to the liver.) This increase in pressure is caused by a blockage of blood flow through the liver. Increased pressure in the portal vein causes large veins to develop across the esophagus and stomach to bypass the blockage. These varices are fragile and bleed easily, causing internal bleeding.

Proctosigmoidectomy:
An operation that removes a diseased section of the rectum and sigmoid colon.

Pulse oximetry:
Photoelectric device which measures the percent of oxygenation in the blood using a clip on the finger. Also measures the heart rate.

Radiology:
A branch of medicine that uses radioactive substances and visual devices to diagnose and treat a wide variety of diseases.

Rectal bleeding:
A symptom of digestive problems rather than a disease. Bleeding can occur as a result of a number of different conditions, many of which are not life-threatening. Most causes of bleeding are related to conditions that can be cured or controlled, such as hemorrhoids. However, rectal bleeding may be an early sign of rectal cancer so it is important to locate the source of the bleeding.

Rectal prolapse:
Dropping down of the rectum outside the anus.

Rectopexy:
Surgical placement of internal sutures (stitches) to secure the rectum in its proper position.

Rectum:
The chamber connected to the large intestine which receives solid waste (feces) from the descending colon to be expelled from the body.

Risk factor:
A characteristic or event that predisposes a person to a certain condition.

Sclerotherapy:
The use of sclerosing chemicals to treat varicosities such as hemorrhoids or esophageal varices.

Shunt:
The joining between two veins to reduce pressure and stop bleeding varices.

Small intestine:
The portion of the digestive tract that first receives food from the stomach. It is divided into three sections: the duodenum, the jejunum and the ileum.

Sphincteroplasty:
Or rectal sphincter repair, is the most common procedure used to correct a defect in the anal sphincter muscles. There are two anal muscles that control bowel movements, similar to two round doughnuts, one inside of the other. If a defect exists in the complete circle of muscle, the problem can be corrected with this surgery. During the sphincteroplasty, the two ends of the muscle are cut and overlapped onto one another, then sewn in place. This procedure then restores the complete circle of muscle.

Stoma:
An artificial opening of the intestine to outside the abdominal wall.

Stomach (gastric) cancer:
Disease in which cancer cells are found in the lining of the stomach. Stomach cancer can develop in any part of the stomach and may spread throughout the stomach to other organs.

Swallowing problems:
Swallowing and esophageal disorders may be temporary, or they may be an indication of a serious medical problem. Swallowing disorders have many causes, including nerve and muscle problems, head and neck injuries and cancer, or they may occur as the result of a stroke. Certain medications — such as antidepressants, antibiotics, heart medications and some drugs used in chemotherapy for cancer — can contribute to a swallowing problem.

Thrombosis:
A blood clot.

Total abdominal colectomy:
Surgical removal of the entire colon.

Trocar:
Sharp, pointed instrument used to make a puncture incision in the abdominal wall. Used for placement of cannulas.

Ulcerative colitis:
A disease that causes inflammation and sores, called ulcers, in the top layers of the lining of the large intestine. The inflammation usually occurs in the rectum and lower part of the colon, but it may affect the entire colon. Ulcerative colitis rarely affects the small intestine except for the lower section, called the ileum.

Ulcers:
A break in the lining of the stomach or in the first part of the small intestine (the duodenum), a result of an imbalance between digestive fluids (hydrochloric acid and pepsin) in the stomach and the duodenum. Much of that imbalance is related to infection with the bacterium Helicobacter pylori (H. pylori). This disease is now curable with antibiotics.

Ultrasound:
A test used to diagnose a wide range of diseases and conditions in which high-frequency sound waves, inaudible to the human ear, are transmitted through body tissues. The echoes vary according to the tissue density. The echoes are recorded and translated into video or photographic images that are displayed on a monitor.

Urea breath test:
A test used to detect urease, an enzyme produced by Helicobacter pylori (H. pylori), a type of bacteria that usually infects the stomach or duodenum (first part of the small intestine).

Variceal bleeding:
A complication of cirrhosis caused by portal hypertension. Increased pressure in the portal vein causes large veins to develop across the esophagus and stomach to bypass the blockage. These varices are fragile and bleed easily, causing internal bleeding.

Varices:
Large, swollen veins that develop across the stomach and esophagus that cause internal bleeding.

Vomiting:
The forcible expulsion of the contents of the stomach through the mouth which occurs with symptoms of nausea. Vomiting is not a disease but a symptom of many disorders.