



# Understanding Your Obesity Treatment Options

An educational resource provided by



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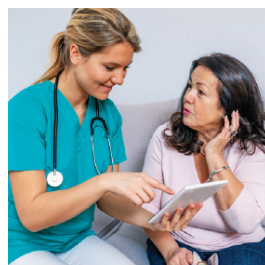
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# UNDERSTANDING YOUR OBESITY TREATMENT OPTIONS

Understanding how weight impacts your health is important. It is also important to know that treating obesity is not something you need to do alone. Weight and weight-loss are both complex. However, weight-loss as small as 5% of your total body weight has been shown to have health benefits in people with obesity. Your healthcare provider can help you better understand the different reasons for weight gain and the options available to you for your weight-loss journey.

A variety of obesity treatment options exist, so it can be confusing to know where to begin. It is often best to use a combination of methods in your weight-loss plan. There is no “one size fits all” approach that works for everyone, and a combination of strategies works for many people in the long-term. Talk to your healthcare provider about lifestyle modifications and other weight-loss tools that can help make your weight-loss and weight management efforts successful.

**Please Note:** Before starting any obesity treatment option, please see a healthcare provider. Together, you can discuss options and select the ones that best fit you and your lifestyle.





This brochure looks at the most common obesity treatment options available today, including:

- Behavior modification
- Community-based programs
- Commercial weight-loss options
- Physician-supervised options
- Bariatric surgery and devices



If you do not have a healthcare provider who specializes in treating obesity, please visit the Obesity Care Providers website, powered by the Obesity Action Coalition, to find an obesity care provider in your area. To locate a provider today, visit **ObesityCareProviders.com**.



# BEHAVIOR MODIFICATION

Your behaviors include nearly every decision you make and can greatly impact your health. Do you grab a quick bite from a fast-food restaurant or pack a healthy lunch? Do you make time to exercise? Are your behaviors influencing your family's behaviors, too? This section discusses easy ways you can make healthy lifestyle choices. Changing your habits and behaviors can be difficult, but it's possible with the right tools and support, such as working with a healthcare provider.

## Understanding Health and Nutrition

Most people do not spend time thinking about the complex systems that make up our bodies. Our food and physical activity choices can either help or harm our body, but we often neglect to consider this. Learning more about your body and how to nourish it is essential for improving your health and managing your weight. There are a variety of ways you can learn more about health and nutrition, including the following options.

**Talking to Your Healthcare Provider (HCP)** – Discussing your weight with your HCP is a great first step. It is important to be prepared for your first visit. Here is a list of things to have on-hand for your discussion.

- A food journal that shows all foods and beverages you consumed for one week
- A list of any and all physical activity for that same period of time
- A list of any and all medical conditions you have, as well as medical conditions in your family, including diabetes, heart disease, hypertension, etc.
- A list of all prescription medications, over-the-counter medications, vitamins and supplements you take on a regular basis

**Meeting with a Registered Dietitian (RD)** – Registered dietitians are nutrition experts who can help you learn about eating well, meal planning, and how to make dietary changes that can improve your health. Choosing nutritious foods in appropriate portion sizes can be difficult, but an RD can help you:

- Make meal plans that work for you
- Learn about food and how it affects your weight and health
- Develop nutritional goals

The Academy of Nutrition and Dietetics is a professional society where most registered dietitians are members. The Academy has an online tool to help you locate a dietitian in your area or ask your primary care provider (PCP) to refer you. You can find this tool at **[EatRight.org/find-a-nutrition-expert](https://www.eatright.org/find-a-nutrition-expert)**.

## Conclusion

Your everyday choices are your behaviors. They include everything from how much sleep you get each night to what you have for lunch and if you take the stairs or the elevator. Your behaviors join together to form your lifestyle. Making lifestyle modifications is key to managing your weight and health. Finding modifications that work and are sustainable long-term can be difficult, but they will also give you the greatest results in your weight-loss journey.



# COMMUNITY-BASED PROGRAMS

Community-based programs can be an excellent way to learn from others dealing with weight-related issues. They can also be a good source of motivation and accountability. The programs mentioned in this section are not all inclusive, meaning they do not include meals. You might want to try out several programs in your area to find the best fit.

## TOPS Club, Inc. (TAKE OFF POUNDS SENSIBLY)



**TAKE OFF POUNDS  
SENSIBLY**

Founded in 1948, TOPS (Take Off Pounds Sensibly) is the original non-profit weight-loss support group. TOPS does not sell foods, endorse products, promote quick fixes or push a one-size-fits-all meal plan. TOPS provides members in thousands of chapters across the U.S. and Canada with the information and support needed to make healthy lifestyle changes they can enjoy for a lifetime.



**How does it work?** No foods are required and none are off-limits. When it comes to healthy eating, TOPS advocates portion control and balanced eating within two healthy frameworks: the USDA's MyPlate, and the Food Exchange System developed by the Academy of Nutrition and Dietetics and the American Diabetes Association. Many dietitians use these same frameworks for teaching healthy eating.

TOPS offers tools, tips and meal-planning ideas when using MyPlate and the Exchange System in its membership magazine and other materials. To promote a healthier lifestyle, TOPS encourages members to engage in more physical activity, consume a diverse range of nutritious foods in moderation, and modify their habits and thinking patterns with the help of weekly group support. Weekly TOPS meetings led by volunteers focus on making small, steady lifestyle changes that provide lasting weight-loss and better health.

Each meeting includes a confidential weigh-in so members can stay accountable to the scale, a brief educational program on nutrition, fitness, health or behavior change, and an opportunity to share challenges and successes from the previous week. Members are urged to consult with their healthcare provider to set a realistic, healthy goal weight and a calorie level that is safe, effective and sustainable.

The first visit to any chapter is free. Membership includes weekly weigh-ins and meetings, chapter materials, a subscription to the magazine, a quick-start guide, and online tools. Online support includes a virtual online chat (for online-only members), recipes, a self-care program, and online weight and exercise trackers.



**Weight-loss:** TOPS advocates slow, steady weight-loss using techniques and small behavior changes that members can naturally incorporate into their day and keep for a lifetime. A 2010 university study of 42,500 TOPS members found that those staying in TOPS for three years were able to maintain their weight-loss throughout that time and lost as much weight as dieters using popular commercial weight-loss programs.



**Concerns:** Regular attendance and participation in a local chapter or online community is necessary for success. Each chapter tends to take on its own personality, reflecting the ages, backgrounds and interests of its members. Finding a local chapter that is a “fit” for your personality and schedule is important.





# YMCA DIABETES PREVENTION PROGRAM



## YMCA'S DIABETES PREVENTION PROGRAM

As a leading nonprofit organization for strengthening community through youth development, healthy living and social responsibility, the YMCA believes all people should be able to live their fullest, healthiest lives. In the YMCA's Diabetes Prevention Program, a trained lifestyle coach will introduce topics in a supportive, small group environment and encourage participants as they explore how healthy eating, physical activity and behavior changes can benefit their health.



**How does it work?** The 12-month, group-based program consists of 16 one-hour weekly sessions, followed by monthly sessions led by a trained lifestyle coach who facilitates a small group of people with similar goals. You will discuss topics such as healthy eating, increasing physical activity, reducing stress, problem solving and much more. The program will also help you stay motivated to maintain progress toward program goals with monthly sessions geared toward weight maintenance.



**Weight-loss:** Based on research funded by the National Institutes of Health, the YMCA Diabetes Prevention Program has been shown to reduce the number of new cases of type 2 diabetes by as much as 58%. The reduction was even greater, 71%, among adults ages 60 years or older. The program's goals include:

- Lose at least 7% of your body weight
- Gradually increase your physical activity to at least 150 minutes per week

The program states that you will accomplish these goals by eating healthy, increasing physical activity and losing weight.

- **Healthy Eating** – Eating smaller portions, reducing fat in your diet and discovering healthier food options have been proven to help prevent the onset of type 2 diabetes.

- **Increasing Physical Activity** – Studies have repeatedly shown that moderate physical activity (walking, swimming, mowing the lawn) for as little as 30 minutes, five days a week can help improve your blood pressure, raise your good cholesterol and prevent blood flow problems.
- **Losing Weight** – Reducing body weight by even a small amount can offer tremendous health benefits for people at risk of diabetes.



**Concerns:** As with all support-based programs, you must take part in the program to experience the results. The main focus of this program is to prevent diabetes; however, weight is also addressed as weight and diabetes are related. You must also be diagnosed with prediabetes to enter the program.

## COMMERCIAL WEIGHT-LOSS OPTIONS

There are hundreds of weight-loss products and programs to choose from, so it can be hard to know where to start.

Commercial weight-loss products and programs not offered through a healthcare provider are called non-clinical. Non-clinical methods vary greatly and can include everything from diet books and supplements to commercial weight-loss programs that might include meal replacements. Some of these options may require you to buy and use the program's foods or supplements. There may also be fees for professional services or devices.

### Non-clinical Weight-loss Options:

- WW (WeightWatchers®)
- Health coaches
- Meal replacement items (protein bars, shakes, etc.)
- Diet books
- Body monitoring devices, such as a Fitbit or Apple watch

- Support groups
- Apps such as Lark™ and MyFitnessPal
- Over-the-counter (OTC) medications such as alli™
- Meal replacement systems such as Nutrisystem

Equal to the number of non-clinical weight-loss options are the types of claims they make. It is important to remember that not all methods and claims are reviewed by the Food and Drug Administration (FDA). The FDA is responsible for making sure products are safe and effective. They review all medical devices as well as medications, whether they are over-the-counter or prescribed. They do not review supplements advertised for weight-loss or diet books.

## Commercial Weight-Loss Centers and Programs

Choosing a commercial weight-loss center or program is one of the most popular options for someone wanting to manage their weight. These options usually provide resources such as pre-packaged meals, support and more. They also traditionally use a 1,000 to 1,500 calorie-per-day diet plan, which can provide quick weight-loss results. However, as weight-loss slows down, it is easy for some people to get frustrated and discouraged or regain weight after they leave the program.

### **Before starting any commercial program, ask the following questions to a program representative:**

- How much weight do clients regain long-term, on average?
- What does your program look like for weight maintenance and follow-up support?
- What rate of weight-loss does your program aim for?
- Does the program emphasize balanced food choices and exercise?
- Will I be required to buy specially formulated foods or supplements?
- What are the costs of membership, weekly fees, brand food, supplements and counseling?
- What are the credentials of those running the program?
- What are the health risks?

Commercial programs usually fit into one of two categories: those that use a meal replacement plan and those that do not. A closer look at the two options is below.

### **Meal Replacement Plans:**

- Participants purchase and eat pre-portioned meals
- Faster initial weight-loss, but harder to maintain long-term once you leave the program
- Convenient, but can also be expensive
- May not teach the basics of healthy eating and nutrition

### **Non-Meal Replacement Plans:**

- Participants eat meals made at home from ingredients bought at the grocery store
- Slower initial weight-loss, but easier to maintain long-term
- Costs and effort similar to traditional meal planning
- Teaches the basics of healthy eating and nutrition

## **Commercial Weight-loss Programs That Use Meal Replacements**

### **NUTRISYSTEM**



Nutrisystem plans provide frozen and shelf-stable, pre-packaged, portion-controlled meals and snacks delivered to your home. All Nutrisystem plans include comprehensive support and counseling options from trained weight-loss coaches and certified diabetes educators, accessible seven days a week via chat, email or telephone.

Nutrisystem features portion-controlled meals and structured, reduced-calorie meal plans that are high in protein and fiber to help you stay full throughout the day. All meal plans align with national guidelines for total fat, saturated fat, trans fat, sodium, carbohydrates, fiber, protein and added sugars.



All plans can be customized to specific dietary needs and preferences, including the Nutrisystem D® program for people living with type 2 diabetes or prediabetes. Once you have reached your weight-loss goal, Nutrisystem offers transition programs to help you continue to follow the portion-controlled principles of the Nutrisystem program while adding back more of your own foods.



**How does it work?** Nutrisystem plans, tailored for men and women, encourage you to consume three meals and two or three snacks per day. The plans offer about 150 items from its menu of ready-to-go and fresh frozen options. Foods are home-delivered, typically in shipments every four weeks. Foods are grouped into three categories: SmartCarbs (nutrient-rich, high-fiber carbohydrates), PowerFuels (lean proteins and healthy fats) and Vegetables (non-starchy ones, which can be eaten freely). Each week, you will also get to include Flex™ meals (one breakfast, one lunch, one dinner and one to two snacks) that you either prepare on your own or have when dining out. Flex™ meals allow you to add flexibility to your program while still following the Nutrisystem meal plan guidelines.

In addition to the Nutrisystem meal plan, you are encouraged to complete three 10-minute bouts of exercise each day, known as My Daily 3. Counseling, for those who want it, is available and included with all Nutrisystem programs. Nutrisystem offers a free tracking app (NuMi) as a companion to the Nutrisystem program.





**Weight-loss:** With the recommended fruits, vegetables and dairy products, this program is considered a well-balanced approach to weight-loss. In a clinical study, participants on the Nutrisystem plan lost an average of 11.6 pounds in their first four weeks. The average results of two clinical studies on the Nutrisystem D® program showed that participants living with diabetes lost an average of 14 pounds at three months and reduced their A1C by 1.02%.



**Concerns:** Participants using pre-packaged meals may need additional help to learn good nutrition, which makes maintaining weight-loss difficult once they return to buying or preparing food on their own. Counselors are also readily available throughout the program to educate about nutrition and good eating habits, so participants may find it difficult to do this on their own after stopping the program.

Membership is free. Pre-packaged meal costs vary depending on your order preferences.





## WW (WeightWatchers®)



**How does it work?** The WW program, WW Freestyle™, builds on the SmartPoints® plan and gives you more flexibility. WW Freestyle gives you the freedom to eat, without tracking or measuring, from a robust list of delicious and satisfying foods while you still successfully lose weight. While everything is on the menu with WW, the WW Freestyle program features an expanded list of more than 200 zero points foods, including: eggs, corn, all fish and seafood, skinless chicken breast, skinless turkey breast, non-fat plain yogurt, beans, peas, lentils and tofu.



The SmartPoints system promotes a healthier eating pattern and aligns with the 2015-2020 Dietary Guidelines for Americans. The SmartPoints system translates complex nutrition information into one simple number, giving each food and beverage a SmartPoints value based on calories, saturated fat, sugar and protein. You are given a personalized Daily SmartPoints target based on your height, weight, age and gender in addition to a Weekly SmartPoints target. For greater flexibility, up to four unused SmartPoints can automatically roll over each day, allowing you to use them as you wish on a later day.



You can follow the WW program in-person at weekly group meetings and/or online. For more information, please visit **WeightWatchers.com**.



**Weight-loss:** WW inspires and guides its members towards a healthier way of life. By following the program, members can expect to lose one to two pounds per week. WW is one of the few programs with weight-loss results that have been clinically proven repeatedly through research studies.



**Concerns:** While Leaders have lived the experience (all Leaders have lost weight on WW and have kept it off) and are trained in behavioral methods to support weight-loss, they are not licensed dietitians. Therefore, those with special dietary requirements should consult with a physician about choosing WW. Another concern is that WW describes foods with a low risk of being overeaten as having a zero-point value, but it's important to note that these foods can contain 60-230 calories. Therefore, it is crucial to consume them in moderation.



# PHYSICIAN-SUPERVISED OPTIONS

Physician-supervised weight-loss programs are one-on-one treatment options that take place in a medical office. These programs are led by a healthcare provider (HCP) such as a:

- Medical provider (MD, DO, PA, NP)
- Registered dietitian (RD)
- Health psychologist

Many times, several HCPs are involved and work as a team in these programs, as they include not only medical advice but also nutrition and lifestyle counseling.

The costs of these programs vary depending on the services offered. Your health insurance company might cover all or some of this treatment. If you have additional obesity-related health conditions such as high blood pressure or type 2 diabetes, they might affect your coverage for these treatment options. Make sure you read and understand your insurance coverage.

For long-term weight management, having a healthcare team that you feel comfortable with and who is trained in obesity medicine is crucial. If you do not currently have a physician that meets your needs, you should explore working with another physician. For help finding physicians and other healthcare providers in your area who are trained in obesity medicine, visit the OAC's Obesity Care Provider Locator at **[ObesityCareProviders.com](https://www.obesitycareproviders.com)**.

## Your first consultation with a healthcare provider may include:

- ✓ A detailed medical evaluation for obesity-related conditions
- ✓ A look into your daily lifestyle
- ✓ A physical exam
- ✓ A weight history (including past weight-loss attempts)
- ✓ A psychological history

Many patients come to the clinic with undiagnosed type 2 diabetes, high cholesterol, thyroid disorders or sleep apnea. Your HCP may recommend additional tests based on your medical history and your initial physical exam. To help manage any obesity-related conditions as well as weight-loss, your program may include:

- Pre-packaged meal replacement plans
- Medical weight management

## Pre-packaged Meal Replacement Plans

Pre-packaged meal replacement plans are a medically supervised weight-loss program. They use meal replacement options along with lifestyle modifications and behavior change counseling to help people reach and maintain their weight-loss and health goals. These programs work as a transition to a healthier, self-prepared nutrition plan while offering education and support. Examples of these programs include:

- OPTIFAST®
- Health Management Resources™ (HMR)
- Advanced Health System™ (AHS)
- New Direction™ (Robard Corporation)
- Medi-Fast™





**How Does it Work?** Individuals who are interested in starting a supervised weight-loss program must do so through an HCP. Most programs list participating providers on their websites.

A medically supervised weight-loss program has individualized phases. The phases generally begin with meal replacements and transition to the use of self-prepared foods for long-term weight-loss. These programs also include guidance from a team of HCPs, access to group or individual counseling, and other support options. Each program will vary and it is important to discuss them with your HCP to find the best option for you.



**Weight-loss:** Individual results will vary, but patients may lose as much as 50 pounds or more over 18 to 24 weeks.



**Concerns:** As with any meal replacement program, there are concerns about the ability of participants to successfully readjust to eating healthy, self-prepared foods following the meal replacement phase. Additionally, insurance coverage varies, so interested individuals need to review their health insurance policy and contact their health insurance company if they have questions or concerns about their coverage.



# Medical Weight Management

## Who is a Candidate for Medications That Help Treat Obesity?

Many people have found that lifestyle changes, combined with medications that aid in weight-loss, have been very effective for long-term weight management.

The FDA has approved six prescription medications for use in people with a BMI over 30 or a BMI over 27 when a patient has additional obesity-related conditions. They are available by prescription only, and you will need to discuss them with your HCP.

Chronic Weight Management Medications	Approved for	
	Short-term Use	Long-term Use
Phentermine Products Adipex® Lomaira® or Suprenza®	✓	
Orlistat Xenical® or Alli®		✓
Naltrexone HCl and Bupropion HCl CONTRAVE®		✓
Phentermine - Topiramate ER Qsymia®		✓
Liraglutide Injection Saxenda®		✓
Semaglutide Injection Wegovy®		✓
Setmelanotide Injection IMCIVREE® (for specific rare genetic diseases of obesity in children)		✓



The average weight-loss resulting from prescription weight-loss drugs is 5-10% of your starting weight. It is important to know that everyone responds differently to medications. Most people who take the medication will see average results, while others may see more significant weight-loss or none at all.

## Will My Insurance Cover Medications to Treat Obesity?

Insurance coverage of prescription weight-loss medications varies by state and by insurance provider. You can log into your insurance provider's website and look under the pharmacy benefits page to see if your insurance plan covers the medication you are considering.

## A Closer Look at Medical Weight-loss Medications:

### Adipex®, Lomaira® and Suprenza® (Phentermine)



**How does it work?** Phentermine is a weight-loss medication that is available by prescription only and has been FDA-approved since 1959. It works on chemicals in your brain to decrease your appetite and includes a mild stimulant to give you energy. Phentermine is a pill taken once a day in the morning and is intended for short-term use.



**Weight-loss:** The average weight-loss is 4-5% of your initial body weight after one year. For a person weighing 200 pounds, this is approximately a 10-pound weight-loss.



**Concerns:** Because Phentermine is a stimulant, it may increase your blood pressure and heart rate, so you should be monitored by an HCP who is experienced in prescribing it. Patients with some heart conditions (such as uncontrolled blood pressure), glaucoma, stroke or an overactive thyroid should avoid this medication.

## Xenical® and Alli® (Orlistat)



**How does it work?** Orlistat is available over-the-counter as alli® and is also available in a higher dose prescription called Xenical®. Both are FDA-approved for weight-loss and work by decreasing the amount of fat your body absorbs. It is taken three times per day before meals that contain dietary fat. Orlistat only allows your body to absorb two-thirds of the calories from the fat consumed in your meal. The other one third is carried away through digestion and becomes part of your stool. More information can be found at [MyAlli.com](http://MyAlli.com).



**Weight-loss:** The average weight-loss is 5% of your initial body weight. For a person weighing 200 pounds, this is approximately a 10-pound weight-loss.



**Concerns:** For individuals who are already consuming a low-fat diet, this medication may not be effective as their calorie intake from fat is already low. People taking Orlistat should take a multivitamin as they are at an increased risk for vitamin deficiencies. Side effects are limited but can include cramps, gas, stool leakage, oil spotting and gas with discharge. These symptoms will improve with a lower-fat diet.

## Naltrexone HCl/Bupropion HCl (Contrave®)



**How does it work?** Contrave® was approved by the FDA in 2014 and is a combination of two medications approved for other medical conditions, Naltrexone and Bupropion. Naltrexone is a medication previously approved for the treatment of narcotic and alcohol dependency. Bupropion is a medication approved as an anti-depressant and to help people stop smoking. When used together, these medications decrease your appetite and help you control eating.



**Weight-loss:** Among individuals who took Contrave® for one year, 65% lost at least 5% of their initial body weight (10-pound weight-loss for a person who weighs 200 pounds) and 39% lost at least 10% of their body weight (20-pound weight-loss for a person who weighs 200 pounds).



**Concerns:** The most common side effects of Contrave® are nausea, constipation, headache, dry mouth, vomiting and dizziness. This medication also has a small occurrence (6%) of increased blood pressure and heart rate.

## Over-the-Counter-Drugs

Currently, alli® is the only over-the-counter (OTC) drug approved by the Food and Drug Administration (FDA) for weight-loss. A drug that has FDA approval means the FDA has reviewed the product and found it to be safe and effective when used as directed. It is not recommended for children under 18 years of age or adults with a BMI below 25. It is important to talk with your HCP before taking any new medication.



**How does it work?** Alli® is a lower-dose version of the prescription drug Xenical® (orlistat). It is a capsule taken three times each day before a meal that includes dietary fat. Alli® works by decreasing the amount of dietary fat absorbed in the intestines. When you take it with a meal, about 25% of the fat you eat isn't broken down. The fat, calories and nutrients not absorbed are then passed through as bowel movements.

Alli® is designed to help increase the amount of weight you lose while eating a healthy diet, exercising regularly and drinking plenty of water. The company that manufactures this drug (GlaxoSmithLine group of companies) offers a website with educational and support resources for people taking alli® at **MyAlli.com**.



**Weight-loss:** The average weight-loss for people who take alli® is about five to ten pounds over six months. This medication is designed to increase your weight-loss while you focus on living a healthy lifestyle. For example, if you've already lost five pounds by adopting a healthy diet and exercising, supplementing with alli® might boost your weight loss by two to three more pounds, resulting in a total weight loss of seven to eight pounds.



**Concerns:** Individuals taking alli® must eat a healthy, balanced diet that includes some dietary fat. Alli® will not help much with weight-loss if you are already following a strict low-fat and low-calorie diet. Individuals using alli® on a regular basis should also take a multivitamin to avoid potential vitamin and mineral deficiencies, as not all nutrients you consume may be absorbed. The side effects of alli® are limited to the gastrointestinal (GI) system and commonly include gas, cramps, stool leakage, oily spotting and gas with discharge. These side effects will decrease as you decrease the amount of fat you consume in your diet.

## Phentermine-Topiramate ER (Qsymia®)



**How does it work?** This combination of medications was approved by the FDA in 2012. Qsymia® is a weight-loss drug that received FDA approval in 1959. Qsymia® is traditionally used to prevent migraines and seizures. Together, they decrease your appetite and increase feelings of fullness after eating.



**Weight-loss:** Weight-loss can vary by dosage. At the lower dose, 62% of individuals on Qsymia® lost 5% of their starting weight. This is approximately a 10-pound weight-loss for a person who weighs 200 pounds. Among people taking the higher dose, 48% lost 10% of their starting weight. This is approximately a 20-pound weight-loss for a person who weighs 200 pounds.



**Concerns:** The most common side effects are dry mouth, constipation, and pins-and-needles feelings in the face, arms, hands and feet. Insomnia may occur if taken later in the day. Women who are pregnant or who are considering becoming pregnant should not take Qsymia® as it has been known to cause birth defects.

## Liraglutide Injection (Saxenda®)



**How does it work?** Saxenda® is an injectable medication approved by the FDA in 2014 to treat type 2 diabetes. It works by increasing your body's natural production of insulin, which regulates blood sugar levels. It also decreases the production of a hormone that opposes insulin, slows down the emptying of the stomach, and helps regulate fullness.



**Weight-loss:** In a study of individuals who were on Saxenda® for one year, 73% lost at least 5% of their starting body weight (10-pound weight-loss for a person who weighs 200 pounds) and 41% lost at least 10% of their initial body weight (20-pound weight-loss for a person who weighs 200 pounds).



**Concerns:** The most common side effects are nausea, vomiting, diarrhea and constipation.

## Semaglutide Injection (Wegovy®)



**How does it work?** Wegovy® is an injectable prescription medicine used for adults with obesity or excess weight who also have weight-related medical problems to help them lose weight. Wegovy® is a glucagon-like-peptide-1 (GLP-1) receptor agonist that is engineered in the laboratory. What this means is that Wegovy® mimics the naturally occurring GLP-1 hormone that is released by our intestines into our bloodstream within minutes after we ingest food.



**Weight-loss:** The effectiveness and safety of Wegovy® have both been demonstrated in the Semaglutide Treatment Effect for People with Obesity (STEP) program. The four STEP studies involved 4,500 individuals from around the world that were either affected by obesity or classified as overweight with co-existing medical conditions resulting from their excess weight.

All individuals were provided lifestyle counseling and were randomized at the flip of a coin to receive either Wegovy® or a matching placebo (a substance that has no therapeutic effect) for a total of 68 weeks.

The average weight-loss in the Wegovy® STEP studies was 15 to 17% of the individual's starting weight. For an individual weighing 230 pounds, this is a 35 to 39-pound weight-loss. In the STEP 1 study, one-third of individuals were able to lose at least 20% of their total body weight.



**Concerns:** Wegovy® should not be used in patients with a history of severe allergic reactions to Semaglutide, nor should it be used in patients with a personal or family history of medullary thyroid carcinoma or a rare condition called Multiple Endocrine Neoplasia syndrome type 2 (MEN 2).

Common side effects include nausea, diarrhea, vomiting and constipation. Wegovy® may also cause hypoglycemia (low blood sugar) if you take it with some other diabetes medications such as sulfonylureas and insulin. Wegovy® also has warnings for inflammation of the pancreas, gallbladder problems, increased heart rate, acute kidney injury (from dehydration) and diabetic retinopathy (damage to the eye's retina if you have diabetes).



# BARIATRIC SURGERY AND DEVICES

Bariatric surgery is a safe and effective treatment option for people with severe obesity and for some with obesity-related health complications. These procedures are recognized for the metabolic and hormonal changes they cause that play a role in hunger (wanting to eat) and satiety (feeling full).

Bariatric surgery is a recognized and accepted approach for both weight-loss and treatment of many of the conditions related to obesity. However, not everyone qualifies for bariatric surgery. There are certain requirements people must meet in order to be a candidate for bariatric surgery. In addition to bariatric surgery, FDA-approved bariatric devices are available for the treatment of obesity.

## Could You Be a Candidate for Bariatric Surgery?

In 2022, the American Society for Metabolic and Bariatric Surgery (ASMBS) and the International Federation for the Surgery of Obesity and Metabolic Disease (IFSO) issued a joint statement declaring bariatric surgery an effective approach for consistent, long-term weight-loss for people with severe obesity. These organizations also established the following criteria for candidacy for bariatric surgery:

- Metabolic and bariatric surgery (MBS) is recommended for individuals with a BMI greater than 35 kg/m<sup>2</sup>, regardless of the presence, absence or severity of co-morbidities.
- MBS should be considered for individuals with metabolic disease and a BMI between 30 to 34.9 kg/m<sup>2</sup>.
- BMI thresholds should be adjusted in the Asian population such that a BMI greater than 25 kg/m<sup>2</sup> suggests clinical obesity, and individuals with BMI greater than 27.5 kg/m<sup>2</sup> should be offered MBS.
- Appropriately-selected children/adolescents should be considered for MBS.

## Benefits:

Within two to three years following bariatric surgery, patients usually lose 10-35% of their total (pre-surgery) body weight. Results depend on the procedure and vary by individual. If you are considering bariatric surgery, talk with your bariatric surgeon about what your personal expectations for weight-loss should be.

Bariatric surgery can help treat obesity-related conditions such as type 2 diabetes, high blood pressure, sleep apnea and others. Quite often, these conditions are reduced in severity or go into remission. Many surgery patients find they need fewer medications following surgery and may be able to discontinue some completely.

## Risks:

Research has shown that some patients who have bariatric surgery have unsatisfactory weight-loss or regain much of the weight they lost following surgery. Some lifestyle behaviors, like frequently snacking on high-calorie foods or not exercising regularly, can hinder weight-loss and lead to weight regain. Surgical complications can also affect weight-loss. Additional complications exist for different surgeries and devices and are discussed in the following pages.



## Commonly Used Terms for Bariatric Surgery

In this section, you will see terms you may not be familiar with. In this section, you will find a brief description of these terms as they are used when talking about bariatric surgery.

### Open, Laparoscopic and Robotic Procedures

Surgeries in this section are described as being performed either open or laparoscopically. Currently, laparoscopic procedures are more common than open procedures. Your surgeon will decide which approach to use and base this decision on several factors, including their own experience as well as your surgical and medical history. Make sure you discuss with your surgeon beforehand what approach they will use and why.

- **Open** – An open procedure involves a single incision that opens the abdomen, which provides the surgeon access to the abdominal cavity. The incision can vary in length from as little as three inches to as large as six or more inches.
- **Laparoscopic** – In laparoscopic surgery, a small video camera is inserted into the abdomen through a small incision. This allows the surgeon to conduct and view the procedure on a video monitor. Both the camera and the surgical instruments are inserted through small incisions made in the abdominal wall. The number of incisions will vary depending on the surgical procedure and the surgeon's experience. Some surgical procedures can be performed with a single incision, while other procedures may involve six or more small incisions.
- **Robotic** – In robotic surgery, a small three-dimensional camera is inserted into the abdominal cavity. Robotic-controlled arms hold a variety of instruments such as scissors, graspers and staplers. These are introduced into the abdomen through small incisions. The surgeon sits at a computer console to the side of the patient and uses specialized instruments to "drive" the robotic arms to perform the surgery.

## Metabolic vs. Non-metabolic

**Metabolic Operations** – The operations in this category help patients lose weight by altering their gastrointestinal (GI) tracts. Examples include the vertical sleeve gastrectomy (VSG), Roux-en-Y gastric bypass (RNYGB), and the biliopancreatic diversion with duodenal switch (BPD/DS).

By altering the GI tract, a patient's physiological response to eating changes. Metabolic surgery alters the secretion of your gut hormones, which greatly reduces feelings of hunger and is helpful when attempting to lose weight. Recent research indicates that bariatric surgery works by making anatomic and metabolic changes that affect weight-loss.

Numerous studies have examined pre-operative and post-operative gut hormone levels after bariatric surgery. A brief summary of hormonal changes after each bariatric procedure is provided in the next sections. Some of these hormones are:

- **Ghrelin:** Stimulates appetite, increases food storage and promotes fat storage
- **Glucagon-like peptide 1 (GLP-1):** Increases satiety (fullness) and reduces stomach emptying
- **Peptide YY (PYY):** Reduces appetite and increases the efficiency of digestion and nutrient absorption

**Non-metabolic Operations** – The options in this category provide significant weight-loss without altering the gastrointestinal (GI) tract and changing the physiological response to fat loss. One example is the laparoscopic adjustable gastric band (LapBand®). With bandings and with dieting, orexigenic hormones (appetite stimulants) increase and anorexigenic hormones (appetite suppressants) decrease.

## Bariatric Surgery Options

It is no small task to choose a bariatric surgery procedure. There are many choices, various costs, associated risks, and many benefits. It is our goal to provide you with background information on the different types of bariatric surgeries and devices so that you can talk to your healthcare provider about choosing the approach that is best for you.

Bariatric surgery requires proper follow-up and participation in an integrated program that stresses lifestyle modifications (dietary, behavioral and exercise changes). This will improve the chances for a bariatric surgery patient to maximize their weight-loss and maintain it for a lifetime.

## Bariatric Surgical Procedures Include:

- Sleeve Gastrectomy
- Roux-en-Y Gastric Bypass (RYGB)
- Biliopancreatic Diversion with Duodenal Switch (BPD/DS)
- Single Anastomosis Duodeno-Ileal Bypass with Sleeve Gastrectomy (SADI-S)
- Adjustable Gastric Banding (LAP-BAND®)
- Robotic Surgery

Please be sure to discuss the various surgical options with your physician to determine which procedure is best for you.

### Sleeve Gastrectomy (Metabolic)



#### What is a Sleeve Gastrectomy?

The vertical sleeve gastrectomy (VSG) is one of the most commonly performed bariatric surgical procedures in America. It is performed both in hospitals as well as stand-alone ambulatory surgery centers. It is typically performed laparoscopically or robotically. Open VSGs are rare.

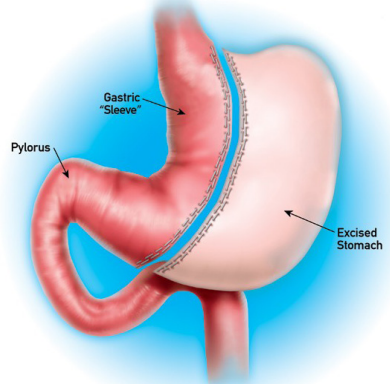


Photo courtesy of Intuitive



**How is the Sleeve Gastrectomy Performed?** The majority of VSGs are performed laparoscopically. During the VSG, about 75% of the stomach is removed. This leaves a narrow gastric tube, or "sleeve." No intestines are removed or bypassed during this procedure, and it generally takes about one to two hours to complete. When compared to other bariatric procedures, the VSG can offer a shorter operative time, which can be advantageous for patients with severe heart or lung disease.



**Weight-loss:** The VSG procedure greatly reduces the size of the stomach and limits the amount of food that can be eaten at one time. It neither decreases the absorption of nutrients nor bypasses the intestines.

After this surgery, patients feel full after eating very small amounts of food. The VSG may also cause a decrease in appetite. On average, by year three, sleeve patients lost approximately 21% of their total body weight from the time of the procedure. In a person who weighs 350 pounds, this is a 74-pound weight-loss.



**Metabolic/Hormonal Changes:** In addition to reducing the size of the stomach, the VSG reduces the amount of ghrelin, a “hunger hormone,” produced by the stomach. The duration of this effect is not clear yet, but most patients have significantly less hunger after the operation. Other hormones in the gastrointestinal (GI) tract may be affected by the sleeve, such as GLP-1 and PYY. Changes to these hormones during a VSG may also decrease appetite.



**Complications:** The VSG has been used successfully for many individuals affected by severe obesity. The risk of death from a VSG is 0.05% (5 in 10,000) within 90 days after surgery. The risk of major post-operative complications after a VSG is less than 5%, which is typically less than the risk associated with the gastric bypass and other metabolic procedures. This is primarily because the small intestine is not divided and reconnected during the VSG.

Complications that can occur within the first month after a VSG include:

- A leak from the sleeve, which can cause an infection or abscess
- Deep venous thrombosis (blood clot) or pulmonary embolism
- Narrowing of the sleeve (stricture) requiring endoscopic dilation
- Bleeding

Major complications requiring re-operation are uncommon after recovery from a sleeve gastrectomy and occur in less than 5% of patients. The two most common reasons for re-operative surgery after a sleeve gastrectomy are weight regain and severe acid reflux that is not responsive to medical therapy.





**Conclusion:** The VSG is a common bariatric surgery procedure that can lead to significant weight-loss. As with any bariatric surgery procedure, the best results are achieved when the surgery is combined with a multi-disciplinary program that focuses on lifestyle and behavioral changes.

## Roux-en-Y Gastric Bypass (Metabolic)



**What is a Roux-en-Y Gastric Bypass?** The Roux-en-Y Gastric Bypass (RYGB) has been performed since the late 1960's as a treatment for people affected by severe obesity. The operation leads to weight-loss through two ways:

1. A small stomach pouch reduces the amount you can eat.
2. A small amount of intestine is bypassed, leading to hormone changes that make you feel less hungry.

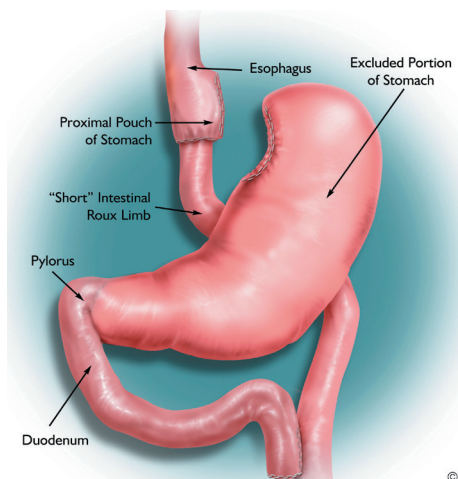


Photo courtesy of Intuitive



**How is it Performed?** A gastric bypass can be performed open (rare), laparoscopically, or robotically. Operations are typically performed at an inpatient hospital. No matter how the operation is done, the "inside part" is the same.

The surgery involves three basic steps:

1. Dividing the stomach into two small separate stomachs, creating a small pouch (proximal pouch of stomach) and a larger, excluded lower pouch (remnant pouch of stomach)
2. Bypassing part of the small intestine to create the "Short" Intestinal Roux Limb
3. Attaching the bypassed intestine (Roux Limb) to the proximal pouch



**How Does it Work?** To understand how a gastric bypass leads to weight-loss, it is helpful to review how the digestive system works.

When we swallow food, it goes down the esophagus and into the stomach. The stomach can hold huge amounts of food (think about a hot dog eating contest). The stomach then churns the food and mixes it with digestive juices to break the solid food down into a liquid form. That liquid food then leaves the stomach and goes into the small intestine where its nutrients can be absorbed and used as fuel. The small gastric pouch created during the gastric bypass limits the amount of food a person can eat during a meal. The pouch will initially hold a very small amount of food (about half a shot glass full or one tablespoon). However, by one-year post-surgery, a gastric bypass patient will be able to eat a meal equal in size to what a seven or eight-year-old child typically eats.

Although the meals after gastric bypass surgery are much smaller than what they were before surgery, they still give the individual the same feeling of fullness they used to get with a much larger meal. Until food is broken down into liquid form, it cannot be absorbed by the small intestine. After a gastric bypass, the food does not turn into liquid until it leaves the “Short Intestinal Roux Limb” (see the image of gastric bypass). The “Short Intestinal Roux Limb,” therefore, does not absorb all the nutrients from food. This is called malabsorption. This also means vitamins and minerals aren’t absorbed as effectively, so gastric bypass patients must take vitamin and mineral supplements for the remainder of their life.

The “Short Intestinal Roux Limb” does not handle sugar or starches well, so gastric bypass patients must limit their intake of sugary and starchy foods. If they don’t, they may experience something referred to as dumping syndrome.

Usually, 10-15 minutes after eating a sugary or starchy food, the individual who is “dumping” begins to experience many of the following symptoms:

- Sweating
- Flushing skin
- Rapid heart rate
- Dizziness
- Low blood pressure
- Abdominal pain
- Vomiting
- Diarrhea
- Shakiness
- Fainting

Dumping can last for 30-45 minutes before going away. Limiting sugars and starches will limit dumping. For many people who have had a gastric bypass, dumping, or the fear of dumping, helps them make better food choices.



**Weight-loss:** On average, by year one, gastric bypass patients lost approximately 34% of their total body weight (weight at the time of procedure). In a person who weighs 350 pounds, this is a 119-pound weight-loss. By year three, bypass patients lost approximately 31.5% of their total body weight.



**Metabolic/Hormonal Changes:** In addition to reducing the size of the stomach, the gastric bypass reduces the amount of ghrelin, a “hunger hormone” produced by the stomach. The duration of this effect is not clear yet, but most patients have significantly less hunger after the operation. Other GI hormones are affected by the anatomical changes created by the bypass, too. The most important is an increase in a hormone called GLP-1. This hormone is responsible for both creating a sense of fullness and decreasing blood sugar levels.



**Complications:** The major complications with gastric bypass include bleeding, leaks, infections, bowel blockages, blood clots in the lungs (pulmonary emboli) and death. The chance of dying in the first 90 days after a gastric bypass is less than one in 1,000 people.

Long-term complications that can occur after a gastric bypass include strictures, ulcers, hernias, weight regain, vitamin and mineral deficiencies, and malnutrition. Most of the long-term problems linked to the gastric bypass operation can be prevented by follow-up appointments with your healthcare team.



**Conclusion:** The gastric bypass is a common bariatric surgery that can lead to significant and sustained weight-loss by reducing food intake and altering GI hormones. While there are short-term and long-term risks associated with the gastric bypass, many of them can be prevented. As with any weight-loss operation, the best results are achieved when surgery is combined with a program that also focuses on lifestyle and behavioral changes.

## Biliopancreatic Diversion with Duodenal Switch (Metabolic)



**What is a Biliopancreatic Diversion with Duodenal Switch?** The Biliopancreatic Diversion with Duodenal Switch (BPD/DS) is an intestinal bypass procedure that can be performed laparoscopically or robotically. It is performed at specialized centers and is not as commonly performed as the gastric bypass or gastric sleeve.

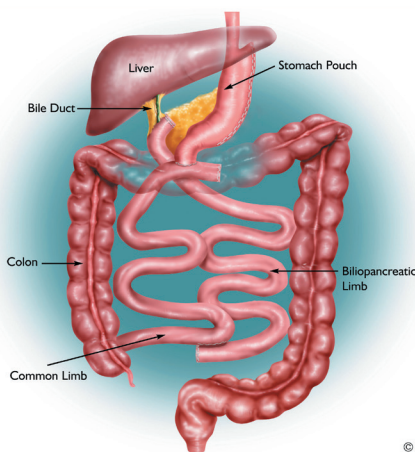


Photo courtesy of Intuitive



### How is it Performed?

The outer part of the stomach is removed (approximately two-thirds, like a sleeve gastrectomy) and the intestines are rearranged to shorten the area where food mixes with digestive juices. A portion of the stomach is left with the pylorus still attached and the duodenum beginning at its end. The duodenum is then divided, allowing for the pancreatic and bile drainage to be bypassed. It is a pyloric-saving procedure that eliminates the “dumping” syndrome inherent to the gastric bypass.



**Weight-loss:** This procedure results in decreased absorption of fat, calories, and other nutrients which may result in increased weight-loss. Foods high in fat are not easily absorbed and will be eliminated, along with their associated high calories. On average, by year three, BPD/DS patients lost approximately 35% of their total body weight (weight at time of procedure). In a person who weighs 350 pounds, this is a 123-pound weight-loss.

As with all bariatric surgery procedures, carbohydrates and sugars are still absorbed, so eating foods high in sugar and calories can make weight-loss difficult or cause weight gain. It is important to remember that eating healthy foods that are low in fat and calories will help with weight-loss. The BPD/DS allows patients to increase portion sizes over time and choose a greater variety of foods at each meal.



**Metabolic/Hormonal Changes:** The metabolic changes that occur with the BPD/DS help patients lose weight and improve their health. The alimentary limb absorbs proteins and sugars from ingested food, but also secretes the GLP-1 hormone in the presence of undigested food. The BPD/DS rearranges this portion of the intestine, causing food to be introduced into the alimentary limb earlier. This enhances GLP-1 secretion, which reduces appetite and releases insulin.



- Decrease in Ghrelin = Decrease in hunger



- Increase in PYY = Increase in satiety



- Increase in GLP-1 = Increase in satiety



**Complications:** Vitamin B-12 deficiencies are not created by the BPD/DS. However, all patients are monitored for iron and B-12 deficiencies, as well as other fat-soluble vitamin deficiencies. BPD/DS patients are specifically monitored for fat-soluble vitamin deficiencies (A, D, E, K) along with zinc. Patients who undergo a BPD/DS can enjoy nutritious foods and eat without the restriction of a small pouch (like with a gastric bypass). The BPD/DS is a more invasive operation compared to the gastric sleeve and gastric bypass. It has a mortality rate of 0.1% (about one in 1,000) within 90 days after surgery.



**Conclusion:** The BPD/DS is a bariatric surgery performed at specialized centers. Its popularity is waning due to the rise of its sister operation, the SADI-S (see following section). It can lead to significant and sustained weight-loss by reducing food intake and altering GI hormones. While there are short and long-term risks associated with the BPD/DS, many of these issues can be prevented. As with any weight-loss operation, the best results are achieved when surgery is combined with a program that also focuses on lifestyle and behavioral changes.

## Single Anastomosis Duodeno-Ileal Bypass with Sleeve Gastrectomy (SADI-S)



**What is SADI-s?** The SADI-S procedure is a modification of the BPD/DS operation.



**How is it Performed?** In most bypass surgeries, surgeons will divide the stomach into an upper and lower part. With SADI-S, they do not divide the stomach into upper and lower parts, but they create a narrow sleeve-shaped stomach by removing the outer “greater curvature” part, including the distinctive fundus (see illustration). Food still goes through the pylorus into the first inch or so of the duodenum. The DS (Duodenal Switch) operations all divide the duodenum very close below the pylorus and connect into the lower part of the small bowel, creating a duodeno-Ileostomy, or duodeno-Ileal anastomosis. Unlike the BPD/DS where there are two intestinal connections, there is only one “loop” anastomosis in the SADI-S operation.

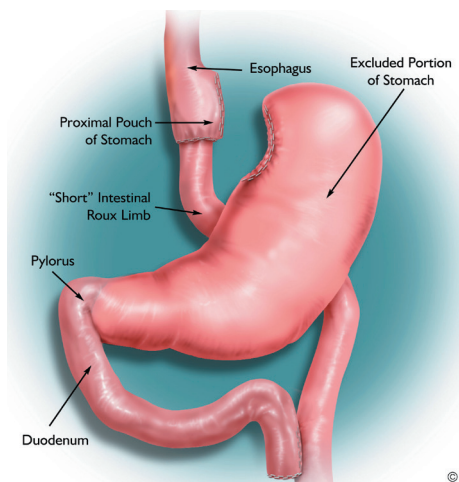


Photo courtesy of Intuitive



**Weight-loss:** The shorter length of “in use” small bowel, compared to the gastric bypass, significantly increases weight-loss, resists weight regain and controls diabetes.





**What Are the Benefits of SADI-S?** Ulcers and dumping syndrome are less common with the SADI-S than with the gastric bypass. SADI-S also avoids the second anastomosis that can cause complications as seen with the original BPD/DS, yet the SADI-S results in similar weight-loss.



**Complications:** Side effects of the bypass/bowel shortening may include a blockage (small bowel obstruction), either from an internal herniation, scar tissue formation or intussusception. Significant scarring is much less common in the era of robotic and laparoscopic surgery. Daily diarrhea is a significant source of patient dissatisfaction with this operation. Diarrhea can usually be easily avoided by avoiding specific foods. In certain situations, re-operative surgery is necessary to lengthen the intestinal limbs.



**Conclusion:** SADI-S is a weight-loss operation that is gaining popularity. It is performed at specialized centers and can lead to significant and sustained weight-loss by reducing food intake and altering GI hormones. While there are short and long-term risks associated with the SADI-S, many of these issues can be prevented. As with any weight-loss operation, the best results are achieved when the surgery is combined with a program that also focuses on lifestyle and behavioral changes.



## Adjustable Gastric Banding (Non-Metabolic)



**What is Adjustable Gastric Banding?** An example of adjustable gastric banding is the LAP-BAND®. This operation involves placing a silicone rubber “belt” around the upper part of the stomach.

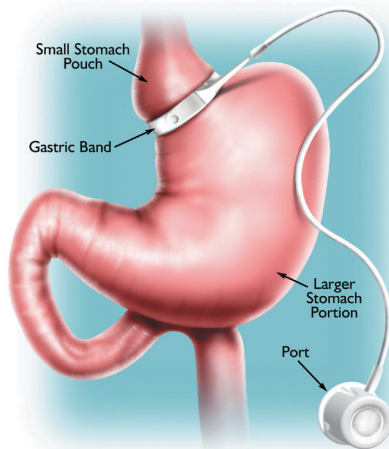


Photo courtesy of Intuitive



**How is it Performed?** The “belt” essentially separates the stomach into two parts: a tiny upper pouch and a larger lower pouch.

The band is connected by tubing to a port (filling reservoir) that sits below the skin of the abdominal wall, usually around the belly button (the port site varies widely by surgeon). The port cannot be seen from the outside, and often cannot be felt. Inside of the “belt” is a balloon that can be filled with fluid through the port. As the balloon fills, it slows the passage of food from the upper pouch to the lower pouch. Patients will feel fuller with smaller amounts of food. You will work with your surgeon to determine the number of band fills or adjustments appropriate for you.



**Weight-loss:** Weight-loss with an adjustable gastric band is typically slow and steady. Band patients generally lose one to two pounds per week during the first year after band placement. On average, by year one, band patients lose approximately 14% of their total body weight (weight at time of procedure). In a person who weighs 350 pounds, this is a 49-pound weight-loss. By year three, band patients lose approximately 15.9% of their total body weight.



**Metabolic/Hormonal Changes:** There are minimal metabolic and hormonal changes with this procedure.



**What Are the Benefits of Gastric Banding?** The LAP-BAND® is FDA-approved for patients with a BMI of 40 or greater, or with a BMI of at least 30 with one or more obesity-related conditions.

There are several other features that make the adjustable gastric band appealing.

- There is minimal stress to the body at the time of surgery because the band is almost always placed laparoscopically and does not involve cutting the stomach or rerouting the intestines.
- Most patients can go home the same day or the next morning.
- Recovery from surgery is usually quick, and most people return to work a week or so after surgery.
- The adjustability of the band makes it unique among weight-loss operations. This feature allows the possibility of making band adjustments based on the individual weight-loss goals and needs of the patient.
- The stomach and intestines are not bypassed, so vitamin, mineral and nutrition problems after banding are less common. However, many programs still recommend taking vitamin supplements after banding.
- While it is a non-metabolic procedure, some patients have reported reduced hunger.



**Complications:** Patients contemplating adjustable gastric banding must be comfortable with the thought of having a medical device in them for life. Although the band has an excellent safety profile, some complications can occur with any weight-loss operation, and the band is no different. It is important for patients to have routine follow-up appointments with their healthcare team for adjustments and monitoring. About 30-50% of patients will require a second operation to address a problem with their band.

Potential complications include band slippage or gastric prolapse, band erosion through the stomach, or tubing leakage. The risk of death from band surgery is equal to or less than 0.1% (one in 1000) within 30 days after surgery. However, many centers report even lower rates. The adjustable gastric band can be removed, if necessary.

It is important to understand that the band is not a short-term fix. It is intended to be left in your body indefinitely. As with other medical devices implanted in the body, long-term effects (20 to 30 years) are unknown at this time with the band.

In the first year after surgery, when band adjustments may be required more frequently, patients need to be available for regular follow-ups with their healthcare team. In deciding if banding is right for you, it is important to consider both the time and distance involved in traveling to where the adjustments will be performed. Adjustments are made by filling the band through the port with fluid through a needle. Band patients do not suffer adverse effects from eating sugars (dumping syndrome), so they need to be more disciplined in their food choices. Foods and beverages like sodas, ice cream, cakes and cookies slide through the band easily. These choices will not lead to the desired goal of significant weight-loss.



**Conclusion:** Adjustable gastric banding is an effective weight-loss operation that can lead to meaningful, long-term weight-loss. Still, individuals need to make lifestyle changes and learn to work with the band to be successful.



## Robotic Surgery



### What is Robotic Surgery?

A robot is not an independent thinking machine that performs surgery at the press of a button, like a microwave. Instead, the robot is an accessory that allows the surgeon to better visualize tissue and have near-complete control during the procedure. Movement and precision are vastly increased. To get an idea of how it works, try to use only your thumb and pointer finger to pinch and rotate/twist whatever you pick up for the next hour. Compare that to using your entire hand and wrist with all the intricacies of bending and rotating them as well. That is the biggest difference between laparoscopic and robotic surgeries.



Photo courtesy of Intuitive



**How is it Performed?** In bariatric surgery, the procedure is started laparoscopically. Robotic arms are connected while the surgeon sits at a hub and controls all aspect of movement, including cautery and suturing within the abdomen. The operating team is right at the patient's side, assisting with changing instruments and communicating with the surgeon directly via microphones and speakers. From the surgeon's standpoint, he/she can sit for the duration of the robotic portion with an amazingly high-definition picture that is rendered in 3-D. The mechanics of the robot allow for the surgeon's movements to be smoothly mimicked by the instruments inside of the abdomen. The robot can use cautery and scissors and allows the surgeon to suture with ease. Put simply, the robot is a great tool for the surgeon. It makes the operation smoother and easier for both the patient and the surgeon while keeping everyone's safety intact.



**Weight-loss:** Weight-loss is dependent on what type of bariatric surgery you have.



## What Are the Risks and Benefits of Robotic Surgery?

Some of the benefits of robotic surgery include:

- Better visual view for the surgeon
- Improved efficiency in the work environment and precision/accuracy
- Improved technique with the elimination of a hand tremor
- Surgeons get less fatigued through the procedure and are more capable of performing surgery
- More control for the surgeon
- Equal safety outcomes compared to laparoscopic surgery
- Options for telesurgery
- Less reported pain at incision sites

Some of the risks of robotic surgery include:

- More expensive for the hospital (although finance options are available)
- Surgeons go through years of training
- Surgeons can normally feel when something isn't right, but robots can't
- Large piece of equipment
- Longer duration of surgery

**Conclusion:** There are many benefits to participating in robotic surgery. Ultimately, whether you can or should receive robotic surgery depends on your surgeon. If you are interested in having robotic surgery, you should consult with your healthcare provider to see if it is the right choice for you.



## Bariatric Devices

Bariatric devices are safe, effective treatment options for individuals with obesity or severe obesity. Currently, there are two bariatric devices approved by the FDA: the ORBERA™ Intra gastric Balloon and Plenity®.

### ORBERA™ Intra gastric Balloon (Non-Metabolic)



#### What Are Intra gastric

**Balloons?** Intra gastric balloons are soft, durable silicone spheres that \promote proper portion control by occupying stomach space and promoting fullness, resulting in smaller meals.



#### Who Qualifies for an Intra gastric Balloon?

Intra gastric balloons are intended for adult patients who have a body mass index (BMI) of 30 to 40. Intra gastric balloons are also an option for individuals who do not want or do not qualify for more invasive bariatric surgery.



**How Does it Work?** The ORBERA™ Intra gastric Balloon is a single balloon that is inserted into the stomach using an endoscope. It is then filled with saline (saltwater) until it is about the size of a grapefruit. Intra gastric balloons occupy some of the existing space in your stomach for six months, serving as built-in portion control. It allows you to feel full and satisfied with less food. After six months, the balloon is removed in the same way it was placed, endoscopically. Through a procedure done under a mild sedative, it is deflated and then removed through the esophagus and mouth.

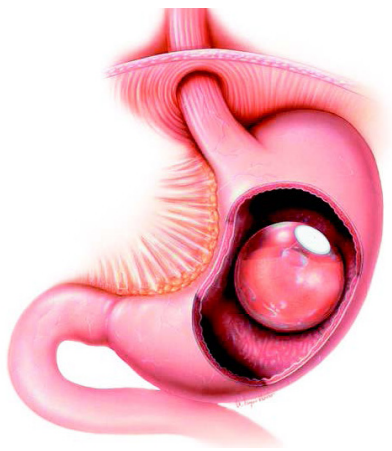


Photo courtesy of Intuitive



**What Are The Risks?** More than 15,000 balloons of the liquid-filled type have been placed in the U.S., and over 350,000 have been placed worldwide. The device has been through extensive trials that show relative safety and effectiveness. However, nothing is absolutely safe and without risks. The FDA is doing its job to follow up on the ongoing use of these devices. The intragastric balloon treatment has a mortality rate of less than one in 10,000 and is considered a safe procedure.



**Weight-loss:** U.S. clinical trial data on ORBERA™ showed that within six months, the average person lost 3.1 times the amount of weight as compared with diet and exercise alone. In real numbers, that means patients with ORBERA™ lost an average of 21.8 pounds (10.2% of their body weight) after the device had been in place for six months. The clinical trial for ORBERA™ also demonstrated that three months after the device was removed (nine months after device placement), ORBERA™ patients maintained an average weight-loss of 19.4 pounds. During the trial, those patients who participated in a behavior modification program (diet, exercise and emotional coaching) but did not receive the ORBERA™ balloon, only lost an average of seven pounds (3.3% of their body weight).



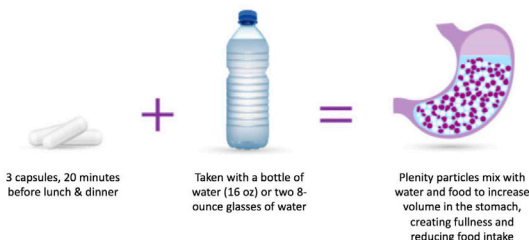
**Concerns:** Following the procedure, you may experience some discomfort as your stomach gets used to the intragastric balloon. Side effects may include nausea, vomiting, and gastric discomfort during the first week. These normal and expected side effects can be relieved with medication and guidance from your HCP. These side effects are normal and are to be expected.



## What is Plenity®?

Plenity® is a new class of weight-loss options called "super absorbent hydrogels." Technically, the Food and Drug

Administration (FDA) cleared Plenity® as a device, but it is actually a pill (capsule) that is taken daily with lunch and dinner to help with weight-loss. Through some impressive food engineering, these capsules release thousands of particles that swell and enlarge in the stomach. The particles then mix with food and travel through the intestines, where they increase feelings of fullness and help patients lose weight.



**Weight-loss:** Plenity®, combined with diet and exercise, may help patients lose an average of 5-10% of their total body weight. Some patients may be extra responsive to Plenity® and lose more weight than others, averaging close to 10% weight-loss. Those who tend to respond better to Plenity® are those who lose 3% or more of their weight in the first eight weeks of using it. It should also be noted that Plenity® is meant to be used with a proper diet and exercise for the best weight-loss outcomes.



**How Does Plenity® Work?** The pill is swallowed with meals and contains thousands of small particles that expand up to 100 times when taken with water. It has the firmness of solid food, similar to vegetables. Plenity® mixes with food in the stomach and travels down the intestines in this enlarged form. The pill expands in the stomach and stays expanded as it works its way through the first part of the intestines. When Plenity® reaches the end of the intestines (colon or large intestine), the water is reabsorbed by the intestines. When the intestines reabsorb the water, the particles shrink down to their original small size and get eliminated with the next bowel movement.



**Complications:** The most common side effects of Plenity® affect the digestive system. These side effects include diarrhea, decreased bowel movements, constipation, abdominal digestion, flatulence (gas) and nausea. This product has not been studied in patients who have already received bariatric surgery.



**Conclusion:** Plenity® can generally be used safely in anyone who wants to lose weight for various reasons. Plenity® moves through the intestines naturally and the results help patients feel fuller, eat less and lose weight.

## CONCLUSION

There are many safe and effective options available for the treatment of obesity and severe obesity. Just remember there is no one “miracle treatment” for anyone, and what worked for someone you know may not be the best option for you. Treating obesity and managing your weight is hard, and there will be ups and downs along the way, no matter what options you choose. Working with a team of HCPs will help. You can work together to pick (and modify) the tools you need to be healthier.



## NOTES

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# BMI CHART

## WEIGHT IN POUNDS

	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400
5'0"	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	71	72	74	76	78
5'1"	24	26	28	30	32	34	36	37	39	42	44	45	47	49	51	53	55	57	59	61	63	64	66	68	70	72	74	76
5'2"	23	25	27	29	31	33	34	36	38	40	42	44	46	48	50	51	53	55	57	59	61	62	64	66	68	70	72	73
5'3"	23	24	26	28	30	32	33	35	37	39	41	43	44	46	48	50	52	53	55	57	59	60	62	64	66	67	69	71
5'4"	22	24	25	27	29	31	32	34	36	38	40	41	43	45	46	48	50	52	53	55	57	59	60	62	64	65	67	69
5'5"	21	23	25	26	28	30	31	33	35	37	38	40	42	43	45	47	48	50	52	53	55	57	58	60	62	63	65	67
5'6"	21	22	24	25	27	29	30	32	34	36	37	39	40	42	44	45	47	49	50	52	53	55	57	58	60	62	63	65
5'7"	20	22	23	25	26	28	29	31	33	35	36	38	39	41	42	44	46	47	49	50	52	53	55	57	58	60	61	63
5'8"	19	21	22	24	25	27	28	30	32	34	35	37	38	40	41	43	44	46	47	49	50	52	53	55	56	58	59	61
5'9"	19	20	22	23	25	26	28	29	31	33	34	36	37	39	40	41	43	44	46	47	49	50	52	53	55	56	58	59
5'10"	18	20	21	23	24	25	27	28	30	32	33	35	36	37	39	40	42	43	45	46	47	49	50	52	53	55	56	58
5'11"	18	19	21	22	23	25	26	28	29	31	32	34	35	36	38	39	41	42	43	45	46	48	49	50	52	53	55	56
6'0"	17	19	20	21	23	24	25	27	28	30	31	33	34	35	37	38	39	41	42	44	45	46	48	49	50	52	53	54
6'1"	17	18	19	21	22	23	25	26	27	29	30	32	33	34	36	37	38	39	41	42	44	45	46	48	49	50	52	53
6'2"	16	18	19	20	21	23	24	25	27	28	30	31	32	33	35	36	37	39	40	41	42	44	45	46	48	49	50	51
6'3"	16	17	18	19	21	22	23	24	26	28	29	30	31	33	34	35	36	38	39	40	41	43	44	45	46	48	49	50
6'4"	15	17	18	19	20	21	23	24	26	27	28	29	31	32	33	34	35	37	38	39	40	41	43	44	45	46	48	49
6'5"	15	16	17	19	20	21	22	24	25	26	27	29	30	31	32	33	34	36	37	38	39	40	42	43	44	45	46	48

Underweight = Less than 18.4

Normal = 18.5 - 24.9

Overweight = 25 - 29.9

Obesity = 30 - 39.9

Severe Obesity = Greater than 40

## HEIGHT

# Find the Right Healthcare Provider to Talk about Your Weight and Health!



**Obesity  
Care  
Providers**

Powered by the Obesity Action Coalition

📍 What is your zip code?

👤 Select Specialty... ▾

🔍 SEARCH

## How does it work? It's easy! Filter your search by:

### Specialization:

- Bariatric Surgeon
- Dietitian
- Nurse Practitioner
- Physician
- Physician Assistant
- Psychiatrist
- Psychologist

### Location:

- Use your zip code to do a quick search
- Find healthcare providers near you!



## Get Useful Tips

### Prepare for your appointment with:

- Valuable tips on what to bring during your consultation
- Practical information to better understand your journey with weight
- Questions to ask in order to have an honest conversation about your weight and health



## ABOUT THE OBESITY ACTION COALITION (OAC)

The Obesity Action Coalition (OAC) is a National non-profit organization dedicated to giving a voice to individuals affected by obesity and helping them along their journey toward better health. Our core focuses are to elevate the conversation of weight and its impact on health, improve access to obesity care, provide science-based education on obesity and its treatments, and fight to eliminate weight bias and discrimination.



### DISCOVER OAC'S COMMUNITY

By joining the OAC Community, you will:

- Gain access to valuable, science-based obesity education through our Resource Library, OAC TV and more.
- Find ongoing support through reliable tools and resources related to weight and health, such as our Community Blog and Discussion Forum.
- Make meaningful connections with others who have similar goals, challenges and stories.
- Take action on the issues most important to you, such as access to medical care or weight bias, to make the world a better place for people with obesity.
- AND MUCH MORE!



## LEARN, CONNECT, ENGAGE

**JOIN TODAY AT  
OBESITYACTION.ORG/JOIN**

info@obesityaction.org | (800) 717-3117



@ObesityActionCoalition



@ObesityAction

