

Bariatric Surgery: Nutrition and Lifestyle

Bariatric Surgery is not a quick or temporary fix for weight loss. Diet and behavioral changes are required for long-term success.

How Does Weight Loss Occur After Bariatric Surgery?



Reduced Stomach Size

- The size of the stomach is about 3 ounces, or the size of an egg (gastric bypass) or small banana (sleeve gastrectomy). Only a small amount of food or liquid can fit into this stomach, which will limit daily calorie intake.
- A typical meal size shortly after surgery may be 2 Tbsp. to ¼ cup. About 1 year after surgery, a typical meal size is 1 to 1.5 cups.



Vitamin, Mineral, and Nutrient Absorption

- The smaller stomach size, decrease in stomach acids, and smaller portion sizes will reduce the body's ability to absorb vitamins/minerals from food.
- After gastric bypass, the shortening of the small intestine will further limit absorption of nutrients.
- Vitamin and mineral supplementation is not temporary. They are required for life!



Food Intolerances

- After bariatric surgery the body may become intolerant to foods high in sugar and high in fat. These foods may cause nausea vomiting, gas, bloating, and diarrhea.
- Foods that may have been well tolerated before surgery may be less tolerated after surgery.
- Some people may not be able to tolerate healthy foods such as raw leafy greens, eggs, beef, and pork.
- Food intolerances are different for everyone.

LIFELONG Dietary Changes for Successful Weight Loss

Avoid high calorie foods, which do not provide proper nutrition:

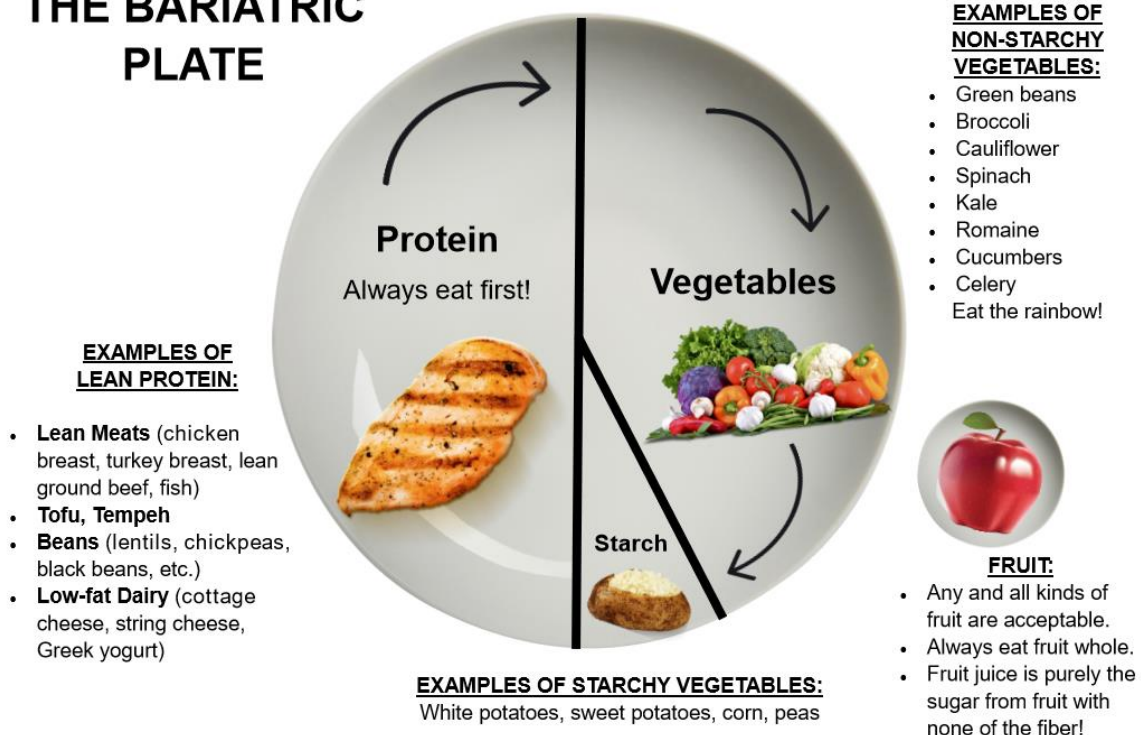
- Fried or greasy foods, fast food
- High-fat processed meats: hot dogs, bacon, sausage, ribs
- Desserts or other sweet-bakery items
- Sweetened beverages: pop, sports drinks, energy drinks, juice, sweet tea
- Beverage additions: coffee creamer, honey, agave, sugar, maple syrup
- High calorie condiments like ranch, BBQ sauce, dressings, mayo, and butter

Avoid the foods which may “swell” in the stomach and may cause vomiting. These foods are considered “filler foods”. This means they take away space in the stomach from protein, fruits, and vegetables.

- Pasta, including whole wheat and gluten free pasta (try spaghetti squash)
- Rice, both white and brown rice (try cauliflower rice)
- Bread products (bread, crackers, chips, wraps, and all other flour-based foods)
- Grains: quinoa, barley, buckwheat, bulgur, popcorn
- Cereal, especially those high in sugar and low in fiber

THE BARIATRIC DIET IS: HIGH PROTEIN, LOW CARBOHYDRATE, AND LOW FAT

THE BARIATRIC PLATE



Avoid all pasta, rice, bread, crackers, pretzels, and grain-based foods.

What Side Effects May Occur After Surgery?



Inadequate Protein Intake

- A minimum of **70 grams of protein a day** is necessary to promote healing, maintain muscles, and protect organ function.
- After surgery, the goal of 70 grams of protein per day is reached through protein supplements (mostly protein shakes), skim milk, low fat dairy products, and lean meats.
- Include protein at every meal and snack and protein should be consumed **FIRST** at every meal or snack!



Dehydration

- It is necessary to take in **at least 64 oz.** of sugar-free, decaf, non-carbonated fluids every day. (Water or zero-calorie fluids are best). Carry a water bottle and sip all day.
- As you progress after surgery, you will be able to take in a larger volume of fluid at one time.



Nausea and Vomiting

- Can be caused by eating too fast, eating too much, drinking liquids while eating, eating foods you do not tolerate, or eating pieces of food that are too large.
- Practice the "fluid window": do not drink fluids 30 minutes before eating, while eating, and wait 30 minutes after eating to drink any fluid. Drinking while eating can flush food through the stomach too quickly, leaving you hungry.



Pain in Upper Shoulder or Upper Chest

- Can occur when too much food is eaten at one time or a food is too difficult to digest. Chew all food well and take small bites.



Dumping Syndrome (with Gastric Bypass)

- Caused by eating simple sugars and drinking liquids with meals. Avoid foods and liquids with high sugar content along with fried, fatty foods.
- Symptoms include diarrhea, bloating, gas, sweating, rapid heart rate, headache, shakiness, dizziness, etc.



Lactose Intolerance and/or Diarrhea

- Use lactase-treated milk or lactase enzyme tablets (Lactaid® products). Usually people can tolerate yogurt and hard cheeses even if they are not tolerating milk. Diarrhea can also occur from high sugar, high fat foods (see #2, dumping syndrome).



Constipation

- Usually resolves within the first month of surgery. The most common cause of constipation is not drinking enough fluids. Aim for at least 64 oz. of fluids every day. Gradually increase fruits and vegetables to add fiber.



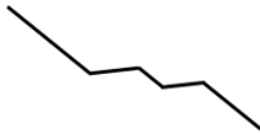
Gas

- Fiber in certain foods may cause gas, like broccoli, cauliflower, and beans. Take Bean-o or Gas-X to alleviate gas symptoms. Eventually, the body will adjust to this fiber.



Heartburn

- May be caused by swallowing extra air through carbonated beverages (soda, sparkling water, sparkling juice, any drinks with bubbles).
- Heartburn may also be caused by drinking with a straw or chewing gum.



Weight Plateau or Weight Gain

- Weight plateaus are normal in the first year after surgery. If your plateau lasts longer than a 3-4 weeks, consider increasing exercise or tracking your dietary intake (let a program dietitian know if you need help looking over your food log).
- Weight gain may occur after surgery if dietary changes are not made, exercise is not performed, or emotional eating habits are not addressed.



Hair Loss/Hair Thinning

- This is a temporary side effect caused by many factors such as: a reaction to the anesthesia, a reaction to the stress of the surgery, rapid weight loss, a lack of protein intake, and rarely, a vitamin deficiency.
- The life cycle of the hair follicle is about 3 months; so you may notice your hair falling out 3 months after surgery.
- To minimize hair loss: take in 70 grams of protein daily and take vitamin and mineral supplements as prescribed.



Intolerance to Alcohol

- Following gastric bypass surgery, the stomach no longer metabolizes alcohol therefore it enters the bloodstream at a much faster rate, which can increase your risk of alcoholic fatty liver disease.
- The risk of alcoholism greatly increases in bariatric populations, as well as the risk of transfer addiction (which is when one will replace food with alcohol as a way to cope).
- Alcohol is a source of empty calories (for all procedures) and can contribute to dumping syndrome.

Changes Required BEFORE Surgery

Our program expects you make changes before surgery. Our dietitians will assess compliance with vitamins, exercise, and diet to ensure you are qualified for surgery. It may take multiple dietitian visits to prove compliancy.

Every week pick a **small** goal to work on. Examples of goals below.

WEEK	GOALS
Week 1	<p>Start bariatric vitamins and minerals.</p> <p>Follow the daily schedule below. Separate each dose by 2-4 hours.</p> <ul style="list-style-type: none"> • Morning/Breakfast: 1 multivitamin with 18mg of iron • Afternoon: 500 mg of calcium citrate (2-3 tablets or 1 soft chew) • Dinner/Bed: 500mg of calcium citrate (2-3 tablets or 1 soft chew)
Week 2	<p>Begin daily exercise. A minimum of 10 minutes per day to start, and increase by 5-10 minutes every week. Start by walking at a brisk pace, every day.</p>
Week 3	<p>Eat 3-4 times per day. Start with breakfast daily, within 1-2 hours after waking up. Then, every 3-4 hours throughout the day, schedule a small snack or meal.</p>
Week 4	<p>Consume protein first at every meal and snack. Aim for 70% of your plate be lean protein, and the other 30% with veggies or fruit.</p>
Week 5	<p>Increase water consumption. Sip on water and calorie-free beverages throughout the day. Daily goal is >64 oz. of fluid.</p>
Week 6	<p>Swap beverages.</p> <ul style="list-style-type: none"> • Taper off caffeine. Wean down by ½ cup every day until you are caffeine-free. Caffeine is a diuretic. • Avoid alcoholic beverages. Alcohol is a source of empty calories. • Switch carbonated beverages to non-carbonated, sugar-free versions. • Use skim (non-fat) or 1% (low-fat) milk products.
Week 7	<p>Practice the “fluid window”. Do not drink 30 minutes before a meal, do not drink during a meal, and do not drink 30 minutes after eating meal.</p>
Weeks 8-12	<p>Begin to change food choices.</p> <ul style="list-style-type: none"> • Avoid high fat, high sugar foods (fried foods, processed meats, cookies, cakes, candy, soda, sports drinks, lemonade, sweet tea, Kool-Aid). • Limit breads, rice, pasta. For example, avoid all wraps, English muffins, pretzels, crackers, cereal, tortillas, and popcorn. • Try protein shakes or powders. Unjury®, GNC AMPTM, Premier Protein®, and Planet’s Purest WheyTM are the brands allowed on the pre-surgical diet. You will want to sample flavors before starting the pre-surgery diet (these shakes are used as meal or snack replacements).

VITAMINS AND MINERALS REQUIRED FOR LIFE

Start before surgery.

MULTIVITAMIN WITH IRON (at least 18mg of iron)

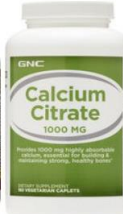


Gummy multivitamins are not acceptable. They do not contain iron.



Start before surgery.

CALCIUM CITRATE



These are not the correct form of calcium. **These are not calcium citrate. Do not use these.**

SUBLINGUAL* Vitamin B12

500 mcg** per day

Start after surgery.



After bariatric surgery, your stomach can no longer absorb B12, and will need to be absorbed under your tongue (sublingual).

*Look for the words **sublingual**, **dissolvable**, or **fast/quick dissolve** on the label.

**Higher amounts of Vitamin B12 are safe to take if the low dose of 500mcg is hard to find.

Start after surgery.

VITAMIN D 2,000 units (50mcg) per day



Some patients may be required to start a prescription strength vitamin D before surgery. This prescription is 50,000 units, once per week.

These are examples of common brands we recommend. There are other vitamins and minerals that can be found online and in chewable forms. Please contact the Bariatric Surgery Program for information about these products or if you are unsure if your vitamins meet requirements.

See next page for daily vitamin schedule.

LIFELONG VITAMIN SCHEDULE

Do you take thyroid medication?

Do not take any vitamins with your thyroid medication. Wait 2-3 hours AFTER thyroid medications.

Do you have kidney disease?

Do not start any vitamins/minerals until they are approved by your nephrologist or PCP.

Vitamin/Mineral Interactions

Do not take iron and calcium at the same time. You will notice they are separated on the schedule below. You also need to separate the doses of calcium. Our bodies can only absorb 500mg of calcium at a time.

	Gastric Bypass	Sleeve Gastrectomy
Breakfast	1 Multivitamin with 18mg of iron 500mcg sublingual B12	1 Multivitamin with 18mg of iron 500mcg sublingual B12
AM Snack	500mg calcium citrate (2-3 tablets or 1-2 soft chews)	
Lunch	500mg calcium citrate (2-3 tablets or 1-2 soft chews) 2,000 units vitamin D	500mg calcium citrate (2-3 tablets or 1-2 soft chews) 2,000 units vitamin D
PM Snack	500mg calcium citrate (2-3 tablets or 1-2 soft chews)	
Dinner/Bed	1 Multivitamin with 18mg of iron	500mg calcium citrate (2-3 tablets or 1-2 soft chews)

IMPORTANT:

You will need 500 mg of calcium citrate each time you take it.
Check the serving size on the label! It usually takes 2-3 tablets or 1-2 soft chews to reach 500mg.

Supplement Facts		
Serving Size: 2 caplets		
Servings Per Container: (Net Qty Contents/Serving Size (# caplets))		
	Amount Per Serving	% Daily Value
Vitamin D (as cholecalciferol)	500 IU	125%
Calcium (elemental)	630 mg	63%
INGREDIENTS: Calcium Citrate, Polyethylene Glycol, Croscarmellose Sodium; Less Than 2% Of: Hydroxypropyl		

Start here – serving
size is 2 tablets to
reach 630mg

Pre-Surgical Nutrition Class

Once you are scheduled for surgery, you will be scheduled for a nutrition class.

This nutrition class will discuss:

- Pre-surgery diet
- What you eat in the hospital
- What you eat when you come home from the hospital
- Post-surgery diet transitions
- Protein supplements
- Important nutrition information to set you up for success

You will need to bring the person who prepares the meals and purchases the groceries to class with you. **Please bring this folder to class!** There will be other patients attending this class, and plan to be at class for at least 4 hours.

IMPORTANT: Some insurance policies do not cover group nutrition classes with a diagnosis of Morbid Obesity and you may receive a bill. You are encouraged to contact your insurance to learn about your policy coverage.

Pre-Surgery Diet

Every patient is *required* to follow a pre-surgical diet plan that lasts for 2-4 weeks (your surgeon decides the length/timeline). This diet is intended to shrink your liver, and you may also lose weight during this time. More details can be found on next few pages and in pre-surgery nutrition class.

Overview of Post-Surgery Diet



1. Bariatric Clear Liquids: starts the day after surgery.
2. Bariatric Full Liquids: starts the day you go home from the hospital.
3. Bariatric Pureed Food: starts at your 2-week post-op clinic visit.
4. Bariatric Soft Foods: lasts about 2 weeks for Bypass and 4 weeks for the Sleeve.
5. Bariatric Regular diet: Begins at your 2-month post-op visit. You will follow this plan for the rest of your life! A bariatric diet is one that is low in fat, low in sugar, focuses on protein, fruits, and vegetables, and limits refined grain products like bread, pasta, white rice.

You will attend follow-up clinic appointments with your dietitian to monitor your nutritional health, diet progression, and food tolerance. You can call or message the dietitians with any food or nutrition-related questions both before and after surgery.