HARMONY
NUTRITION

Bariatric Nutrition Support Handbook

A comprehensive evidence-based nutrition guide for pre and post-bariatric surgery

Last Updated 2/3/2023

Introduction

Choosing to have bariatric surgery is a big decision. We are here to support you in your weight loss journey and ensure that you are successful in meeting your goals as well as keeping you healthy throughout this transformation. Patients who undergo bariatric surgery are committing to lifelong lifestyle changes such as staying compliant with your dietary supplements and consuming adequate fluids and proteins each day in order to avoid serious medical complications.

Permanent lifestyle and dietary changes are necessary in order to see sustained weight loss after surgery. Bariatric surgery is only part of the treatment. The most important factor of gastric bypass, sleeve gastrectomy, and revisional bariatric surgery is making a lifelong commitment to your diet. Studies show that approximately 20–30% of patients do not achieve successful weight outcomes after surgery and patients may experience a regain of 20–25% of their lost weight.

Following up with your dietitian for two years after surgery is highly recommended. Research has shown that patients with no follow-up visits were 4.6 times more likely to regain weight after surgery.

The purpose of this handbook is to provide you with tools to help you achieve success on your weight loss journey. We are thrilled to be a part of your care team and look forward to celebrating your victories together.

Sincerely,

The Bariatric Team at
Harmony Nutrition

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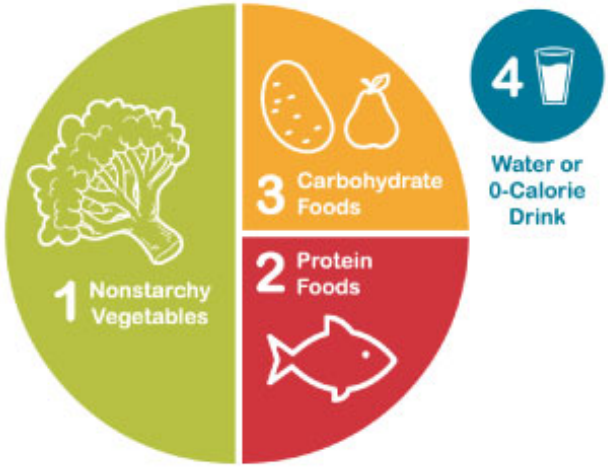
Setting Up Your Plate (Before Surgery)

- Fill half of your plate with non-starchy vegetables to help promote satiety (fullness) after a meal.
- Fill one-quarter of your plate with "lean proteins". Lean sources of protein have more than half of their calories coming from protein.
- Fill the other one-quarter of your plate with complex starches or lower-sugar fruits.
- Avoid sugary drinks which include fruit juice and soda. Drink water or a sugar-free beverage.



See examples of foods to fill your plate on the next four pages.

Non-Starchy Vegetables

Choose at least **1 cup cooked or 2 cups raw servings** of non-starchy vegetables with lunch and dinner. The list below provides examples of non-starchy vegetables.

arugula
asparagus
kale
bell peppers
bok choy
broccoli
green beans
snow peas
sprouts (bean, alfalfa, etc)
spaghetti squash
tomatoes
Brussels sprouts
cabbage
carrots
cauliflower
celery
collard greens
cucumber
spinach

Proteins

Most foods contain a combination of carbohydrates, proteins, and fats. **In order for a food to be considered a protein, more than half of the calories coming from that particular food come from protein.** Examples are listed below.

Chicken Breast (3 oz)	141 Calories/26 g protein
Turkey-93% lean or greater (3 oz.)	128 Calories/16 g protein
Steak-lean cuts like sirloin	150 Calories/26 g protein
Ground Beef -90% lean or greater (3 oz.)	178 Calories/21 g protein
Egg White (3/4 Cup or 6 whites)	94.8 Calories/22 g protein
Powdered Protein Isolate (1 scoop of 20 g/Standard Scoop)	150 Calories/20 g protein
Low-fat Cottage Cheese (3/4 Cup)	122 Calories/21 g protein
Cooked white flaky fish (3 ounces)	95 Calories/21 g protein
Cooked shellfish (3 ounces)	84 Calories/18 g protein
Canned tuna in water (3 ounces)	97 Calories/21 g protein
String Cheese (2)	90 Calories/10 g protein
Fat Free Greek Yogurt (5.3 ounces/standard cup)	100-120 Calories/12-15 g protein

Starches and Grains

Starches and grains provide carbohydrates which are our body's preferred sources of energy. Choosing **higher fiber and lower sugar** options provide us with longer-lasting energy throughout the day, leaving us feeling fuller longer, and helping to control blood sugar more effectively. Here is a list of what **ONE** serving of carbohydrates looks like. These **servings contain roughly 80 Calories and 15 g of carbohydrates** and include at least 2 g dietary fiber.

1/2 cup Acorn Squash
2/3 cup butternut squash
1 cup baby carrots
1/2 medium baked potato
1/2 medium sweet potato
1/3 cup cooked barley
1/2 cup cooked brown rice
1/2 cup cooked couscous
2/3 cup cooked whole wheat pasta
1/3 cup cooked quinoa
1/2 cup cooked wild rice
1/4 cup oats (dry/before cooking)
1 slice whole wheat of sprouted grain bread
1/2 cup legumes (chickpeas, kidney beans, black beans, pinto beans, green peas etc…)
3 cups light popped popcorn

Label Reading

1. Serving Information
2. Calories
3. Nutrients

Nutrition Facts

4 servings per container
Serving size **1 cup (227g)**

Amount per serving
Calories **280**

	% Daily Value*
Total Fat 9g	**12%**
Saturated Fat 4.5g	**23%**
Trans Fat 0g	
Cholesterol 35mg	**12%**
Sodium 850mg	**37%**
Total Carbohydrate 34g	**12%**
Dietary Fiber 4g	**14%**
Total Sugars 6g	
Includes 0g Added Sugars	**0%**
Protein 15g	
Vitamin D 0mcg	0%
Calcium 320mg	25%
Iron 1.6mg	8%
Potassium 510mg	10%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Aim to stay under 20% of your %DV sodium from any given item

Aim to stay under 25 g added sugars/day

Daily Values (DV) helps you to evaluate how a particular food or beverage fits into your daily eating plan:

• Daily Values are average levels of nutrients for a person eating **2,000 calories a day**.

• Remember: percent DV are for the entire day – not just for one meal or snack.

• Everyone is unique. You may need more or less than 2,000 calories per day.

For some nutrients, such as sodium, cholesterol, and added sugars you may need less than 100% DV.

• 5 percent or less is low – try to aim low in saturated fat, trans fat, sodium and added sugars.

• 20 percent or more is high – try to aim high in vitamins, minerals and dietary fiber.

Sugar

- Start to remove all sugary drinks (sweet tea, sodas, juices, fruit drinks, Gatorades, etc.) from your diet and replace them with water or flavored drinks that do not have added sugar or carbonation prior to surgery.
- The average kitchen glass holds about 16 oz of liquids. Four ounces of juice have about 60 calories. So one 16 oz glass of juice (or other sugary drink) will have roughly 240 calories and zero protein! These empty calories also provide you with little to no vitamins, minerals, protein, or fiber which is why we refer to these items as empty calories.

Think of your calories as money!

Everyone has a certain amount of calories they need per day. Exceeding this amount is part of what contributes to weight gain. Just like everyone has a certain amount of money they should spend per day. If you spend more than this, you may "overdraft". Eating more calories than your body needs is like "overdrafting". Say you have 1,400 Calories you can consume per day. You are hungry so you would like to "spend" 100 calories. Consider the image below.

10 potato chips provides:

- 0 g fiber
- 0 %DV vitamin C
- 250 mg sodium
- 6 g fat

28 baby carrots:

- 6 g fiber
- 12% DV vitamin C
- 180 mg sodium
- 0 g fat

Which food do you think is a better way to "spend" your 100 calories?

Fluid Intake

- Water is calorie-free. Switching from high-calorie drinks to water can help you achieve and maintain a healthy body weight by reducing your total calorie intake by 500 to 1,000 calories per day.
- Water helps you feel full and drinking water before a meal can help you consume fewer calories when you eat. Some people mistake thirst for hunger and eat when they are actually thirsty.
- Men should consume at least 13 cups of fluids per day and women should drink at least 9 cups. Meeting these minimum fluid requirements with water is beneficial for weight loss.
- The process of fat loss requires hydrolysis which is a chemical process requiring water. Hence, inadequate water intake will chemically slow your body down from losing weight.

Natural Sweeteners/Flavors:

If you are still adjusting to the taste of plain water, consider these flavor drops that are free of artificial sweeteners.

- Stur® and True Lemon®: Sweetened with stevia- a natural calorie-free sweetener
- Sweet Leaf®: Sweetened with monk fruit extract and stevia-both natural calorie-free sweeteners.
- Consider adding fresh lemon or cucumber to water

Sodium

Most Americans are getting too much sodium from the foods they eat. The sodium in salt plays a role in high blood pressure, which is also known as hypertension. (Salt is the common name for sodium chloride.) The 2020-2025 Dietary Guidelines for Americans recommends less than 2,300 milligrams per day of sodium for adults.

- **Focus on fresh foods.** Many foods in their original form, such as fruits, vegetables, fresh meats, poultry, fish, dry beans, eggs, milk, yogurt, and grains like rice are naturally low in sodium. Include these foods more often in meals and snacks.
- **Eat processed and prepared foods less often.** Highly processed and ready-to-eat foods tend to be higher in sodium. Eat these foods only occasionally or in smaller amounts – especially cheesy foods, such as pizza; cured meats such as bacon, sausage, hot dogs, and deli or luncheon meats; and ready-to-eat foods, like canned chili, soups, and “instant” flavored noodles and rice.
- **Cook more often at home.** Enjoy home-prepared foods where you are in control of how much salt is added. Use little or no salt when cooking. Even if package instructions say to add salt to the water before boiling, it isn’t required and can often be omitted. When using canned vegetables with salt added, drain and rinse the vegetables to reduce the amount of salt.
- **Try new flavors.** Skip the salt and try salt-free seasonings such as herbs, spices, garlic, vinegar, black pepper, or lemon juice. Make your own salt-free seasonings by combining dried herbs and spices.

Sodium Continued

Read the Nutrition Facts Label and the ingredients list to find packaged and canned foods lower in sodium. Compare the amount of sodium listed and select the product with the lower amount. Look for foods labeled “low sodium,” “reduced sodium,” or “no salt added.”

Use caution with condiments Foods like soy sauce, ketchup, pickles, olives, salad dressing, and seasoning packets are high in sodium. Try low-sodium soy sauce and ketchup. Sprinkle only a small amount from a seasoning packet, not the entire amount.

Allow your taste buds to adjust Like any change, it can take time for your taste buds to adapt to less salt. Foods lower in sodium may taste differently at first, but over time it’s possible to acquire a taste for foods that are lower in sodium.

Salt-free Seasoning Blends

Boost the flavor of foods with salt-free herb and spice blends. Combine ingredients and store in a tightly covered jar. Rub or sprinkle them on food for added flavor.

- **Mixed herb blend:** Mix together ¼ cup dried parsley flakes, 2 tablespoons dried tarragon, and 1 tablespoon each of dried oregano, dill weed, and celery flakes.
- **Italian blend:** Mix together 2 tablespoons each of dried basil and dried marjoram, 1 tablespoon each of garlic powder and dried oregano, and 2 teaspoons each of thyme, crushed dried rosemary, and crushed red pepper.
- **Mexican blend:** Mix together ¼ cup of chili powder, 1 tablespoon each of ground cumin and onion powder, 1 teaspoon each of dried oregano, garlic powder, ground red pepper, and ½ teaspoon of cinnamon.

Schedule Nutrition Visits

Before clients undergo bariatric surgery and to decrease surgical risk, they should be evaluated to determine if their nutrition goals such as appropriate weight loss and repletion of vitamin and mineral deficiencies have been achieved.

After surgery, your dietitian visits are essential for your success. The table below provides you with an idea of how many visits to expect and when to schedule them.

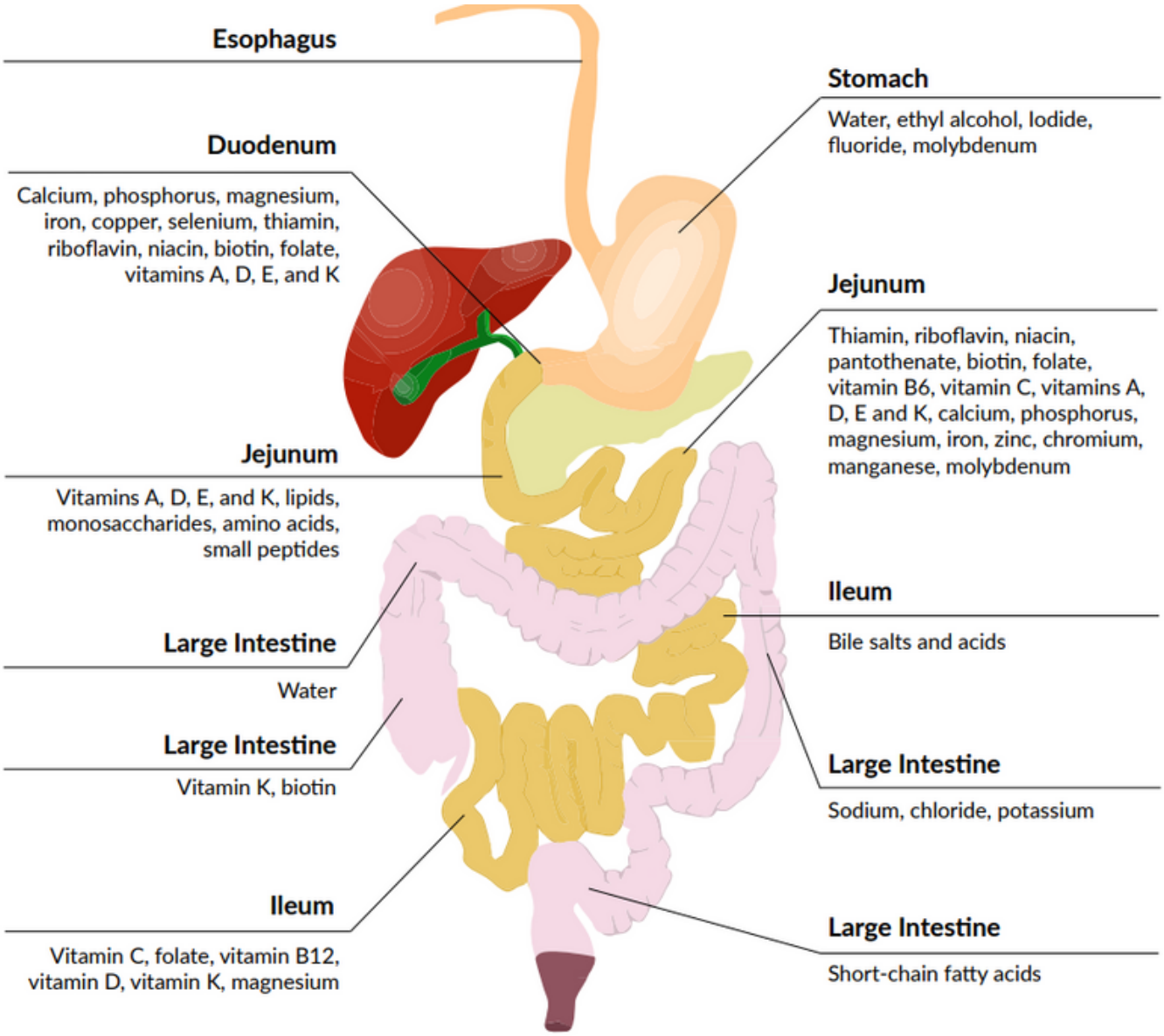
	Pre-Surgery
3-6 Months Before Surgery	Screen for nutrient deficiencies to prevent post-surgical complications Establish lifestyle and dietary changes to support weight loss after surgery and achieve pre-surgery weight loss Multiple appointments may be beneficial prior to surgery
	Post-Surgery
2 weeks	Advance diet, assess tolerance and adequacy of fluid intake
6 and 9 weeks	Group nutrition education class (or individual consultation if groups are not feasible); these classes may include meal and snack ideas, ways to increase protein or fluid, managing emotions, safe physical activity, and/or preventing and managing common complications
12 weeks	Individual consultation with RDN to assess progress
4 to 9 months	Nutrition groups to address behavioral issues, nutrition, building healthy habits, and physical activity
6 to 9 months & 1 year	Individual consultation to assess progress
2-5 years	Groups or individual sessions to support, educate, and reinforce healthy behaviors and review weight changes. Medical nutrition therapy is helpful at this time because most patients experience increased hunger and some weight regain 2 to 5 years post-surgery

Lab Work: To be ordered by your doctor

Vitamin and Mineral Deficits Related to Obesity	**Goal Laboratory Value**
Thiamine, serum	Serum thiamine: 4-15 nmol/L
Iron, serum Total iron-binding capacity (TIBC)	Serum iron: 37-158 mcg/dL TIBC: 250-450 mcg/dL *Serum ferritin should not be used because iron is an acute-phase reactant and may fluctuate with age, inflammation, and infection.
B12, serum Methylmalonic acid, serum	Serum vitamin B12: 200-1000 pg/mL Serum methylmalonic acid: 73-271 nmol/L (elevated levels indicate deficiency)
Folate, serum	Serum folate:" 340-1020µg/mL
Zinc, serum	60-130 mcg/dL
Copper Ceruloplasmin, serum	Serum ceruloplasmin: 75-145 µg/dL *Interpret results with caution, as ceruloplasmin often decreases in times of inflammation
Vitamin D, 25-OH (25-hydroxyvitamin D)	Vitamin D 25-OH: greater than 30 ng/mL
Fat soluble vitamins (A,E,K) Vit A: serum retinol binding protein (RBP)and plasma retinol Vit E: plasma alpha tocopherol	Plasma retinol: 20-80 µg/dL RBP: no value specified Plasma α-tocopherol: >5µg/mL
Parathyroid hormone	PTH is increased in vitamin D deficiency; deficiency if iPTH greater than 65 pg/mL

Micronutrients

Bariatric surgery impacts the anatomy of your digestive system in several different ways due to most of your stomach being removed and the small intestine being bypassed. These changes impact micronutrient absorption, making it necessary to supplement daily with vitamins and minerals.



Iron

Iron is an essential mineral that the body needs for growth and development. Your body uses iron to make hemoglobin, a protein in red blood cells that carries oxygen from the lungs to all parts of the body, and myoglobin, a protein that provides oxygen to muscles. Iron deficiency can lead to GI upset, weakness, tiredness, lack of energy, and problems with concentration and memory. You may also get sick more easily as iron deficiency decreases your body's ability to fight off germs and infections. There are several ways that bariatric surgery can lead to iron deficiency.

- Bariatric surgery typically leads to overall reduced iron intake due to a considerable reduction in your meat intake. Ruz et al.[72]
- Bariatric surgery procedures reduce your stomach's capacity to produce hydrochloric acid. This acid plays an important role in the conversion of iron from food into a more absorbable form of iron that your body can use.
- Bariatric surgery leads to a reduction of the total absorption surface area in your digestive tract. Iron deficiency is especially prevalent in Roux-en-Y Gastric Bypass (RYBP), precisely due to the reduction of stomach capacity [73] in addition to the bypass of the first part of your small intestine which is where iron absorption takes place.

Supplementation: Constipation from iron supplements can often be reduced by simply decreasing your daily dose but only if your doctor agrees after getting your lab results. Most iron supplements are made from ferrous or ferric salts. You may need to switch the type of supplement you are taking from this type of product to an alternative one. Iron supplements that are less likely to cause constipation include:

- Heme iron polypeptides
- Carbonyl iron
- Iron amino-acid chelates
- Polysaccharide-iron complexes
- Ferrous bisglycinate

Vitamin B12

Vitamin B12 plays an important role in the formation of red blood cells and DNA. It also contributes to the development of brain and nerve cells.
Inadequate vitamin B12 in the body can contribute to serious complications including fatigue, weakness, nerve damage with numbness, tingling in the hands and legs, memory loss, confusion, dementia, depression, and seizures.

The main mechanism by which bariatric surgery patients develop vitamin B12 deficiency is associated to a reduced production of intrinsic factor (a protein that helps your intestines absorb vitamin B12). Metformin, a medication often prescribed for patients with type 2 diabetes, seems to affect the absorption of vitamin B12.

Supplementation:

- Patients require 350 mcg to 500 mcg/day of orally dissolving tablet, sublingual, liquid, or nasal spray
- Patients may also opt for a once monthly injection of 1000 mcg

Folate

Folate (otherwise known as vitamin B9) plays many important roles in the body including tissue growth, cell formation, working with vitamin B12 and vitamin C to help the body break down, use, and create new proteins, formation of red blood cells (helps prevent anemia), and DNA production. Complications related to inadequate folate include diarrhea, gray hair, mouth ulcers, peptic ulcer, poor growth, and swollen tongue (glossitis).

Folate deficiency occurs due to bypass of first parts of the small intestine, which are the main sites of absorption.

Supplementation:

- Initiate daily multivitamin (100% DV) that contains 400 mcg folic acid, to be taken twice daily
- Because this supplement is especially important for all women of childbearing age, patients in this category should consume 800 mg to 1000 mg daily. This may require additional supplementation.

Vitamin D

Vitamin D is a nutrient that helps your body absorb calcium and phosphorus. This vitamin is essential for building and maintaining healthy bones. Few foods naturally contain vitamin D - most foods are fortified with it. Sunlight is great source of vitamin D! The bioavailability of vitamin D is reduced in the obese state, because vitamin D is sequestered in adipose tissue. Vitamin D deficiency is also more likely after bariatric surgery due to decreased fat intake and dairy intake.

Supplementation:

- Vitamin D supplementation is dependent on vitamin D status
- Vitamin D "normal" range = 25-80 ng/mL
- If vitamin D <20 ng/mL , initiate 50,000 IU vitamin D3 (cholecalciferol) or vitamin D2 (ergocalciferol) weekly for 8 weeks. Consider adding maintenance dose of vitamin D3 (3,000 IU/day) daily if level is persistently low
- If vitamin D is 25 ng/mL to 30 ng/mL, initiate 3,000 IU vitamin D3 daily for maintenance.
- Preoperative supplementation for vitamin D maintenance: 1,000 international units/day to 2,000 international units/day (including vitamin D from multivitamin); do not exceed 4,000 international units/day

Calcium

Calcium is a mineral that is essential for building healthy bones, regulating a normal heartbeat, and helping muscles contract. When the body is not provided enough calcium through diet, it begins to take the mineral from other parts of the body including our bones and this can decrease bone mineral density. A chronic calcium deficiency may lead to an increased risk of fractures and osteoporosis.

Supplementation:

- Goal lab value: 8.5 to 10.2 mg/dL (2.13 to 2.55 millimol/L)
- Daily calcium needs are 1,200–1,500 milligrams per day after a sleeve gastrectomy or Roux-en-Y gastric bypass
- After a duodenal switch, you need 1,800–2,400 milligrams per day of calcium
- Your body can only absorb 500–600 milligrams of calcium at one time. To enhance absorption, take your supplement as three divided doses throughout the day. You may need to take a calcium supplement with meals for better absorption.

Zinc

Obesity is often accompanied by hyperinsulinemia (high amount of insulin in the blood), which can occur when the body does not respond correctly to insulin, causing the pancreas to produce even more insulin. Hyperinsulinemia is associated with excessive urinary excretion of zinc, therefore decreased plasma zinc. Zinc deficiency can cause a loss of appetite, and impaired immune function. In more severe cases, zinc deficiency causes hair loss, diarrhea, impotence, hypogonadism in males, and eye and skin lesions.

Supplementation:

- Goal lab value: 60-130 mcg/dL
- Supplement with a multivitamin

Thiamine

Thiamine (also known as vitamin B1) is a member of the water-soluble B vitamins. It is mainly known for it's role in carbohydrate metabolism. Nausea and vomiting are common occurrences after bariatric surgery. This side effect may be related to a variety of factors including patient eating behaviors or surgery-related complications, such as stenosis and/or bowel obstruction. Persistent vomiting following bariatric surgery can lead to a thiamine deficiency in the long-term.

Supplementation:

- Goal lab value: Serum thiamine: 4-15 nmol/L
- Supplement with a multivitamin

Copper

Copper has many functions including helping the body form red blood cells, keeping the immune system healthy, and aiding in iron absorption. There is a proposed link between low levels of cellular copper and an increased size in fat cells due to the potential altering of how cells process their main metabolic fuels, such as fat and sugar. Rates of copper deficiency may be relatively high among pre-bariatric surgery patients and may contribute to neurologic disease and/or hematologic abnormalities in extreme cases. Other symptoms may include anemia, low body temperature, bone fractures and osteoporosis, low white blood cell count, irregular heartbeat, loss of pigment from the skin, and thyroid problems.

Supplementation:

- Goal lab value: Serum ceruloplasmin: 75-145 µg/dL
- Supplement with a multivitamin

Fat-Soluble Vitamins - A, E, and K

Vitamins A, **E**, and **K** are three of the four fat-soluble vitamins. Vitamin D is your fourth fat-soluble vitamin, previously discussed on page 16. These vitamins dissolve in fat and are mainly stored in fatty tissue. Bypassing the duodenum (particularly in the roux-en-Y gastric bypass) can have a major influence on malabsorption following surgery since fat-soluble vitamins are absorbed in the duodenum. In addition to this, the post-surgery diet is typically low-calorie, high protein, and *low-fat.* Due to these factors, a fat-soluble vitamin deficiency can occur.

Vitamin A

Vitamin A is an essential fat-soluble vitamin absorbed through the small intestine as either retinol or carotene. There are a few different mechanisms that may lead to a vitamin D deficiency following a gastric bypass. A deficiency may arise from surgically bypassing the duodenum and first portion of the jejunum, which may promote malabsorption. A decrease in dietary intake of vitamin A through food may occur due to decreased intake. Finally, a low-fat diet, which likely limit the absorption of fat-soluble vitamins, may also contribute to a deficiency.

Vitamin A deficiencies have been found in 14% of patients with obesity pre-bariatric surgery and in up to 70% of patients who have undergone the the roux-en-Y gastric bypass surgery. Rare cases of vitamin A deficiency can lead to corneal damage, blindness, and abnormally dry skin.

Supplementation:

- Goal lab value: 20 to 60 micrograms per deciliter (mcg/dL) or 0.69 to 2.09 micromoles per liter (micromol/L)
- Supplement with a multivitamin

Vitamin E

Vitamin E is an antioxidant that is important for your skin, brain, blood, and vision. Antioxidants are substances that protect your cells from free radicals. Though rare, signs and symptoms of vitamin E deficiencies include gait disturbances, muscle weakness, and hemolytic anemia. Only 2.2% of patients (Parrot, et al.) with obesity present with vitamin E deficiency before surgery and reports of vitamin E deficiency following bariatric surgery are rare, too. However a deficiency can occur due to significant fat malabsorption.

Supplementation:

- Goal lab value: 7 - 25.1 mg/L
- Supplement with a multivitamin

Vitamin K

Vitamin K plays an essential role in blood clotting and regulating blood calcium levels. The causes of vitamin K deficiency in patient who undergo bariatric surgery include decreased absorptive surface areas, steatorrhea, bacterial overgrowth, marked reduction of carriers of vitamin K, decrease in vitamin K intake, and modifications of gut microbiota (Sherf-Dagan et al., 2019). Signs and symptoms of vitamin K deficiencies include hemorrhage, bruising, delayed blood clotting, and nose bleeding.

Supplementation:

- Goal lab value: 130 - 1500 pg/mL
- Supplement with a multivitamin

Supplement Guidance

Follow the guidance provided by your doctor and dietitian on the types of vitamins and minerals you will need to take daily to avoid deficiencies and support overall health:

Multivitamins with minerals including iron:
Take a chewable multivitamin with iron twice daily.
Multivitamins should be taken at separate times throughout the day to improve absorption.
Avoid gummy-type vitamins—they do not have all the nutrients your body needs.
Since you will be taking 2 multivitamins a day, you will need a supply of at least 60 chewable tablets for the first month after surgery.

Vitamin B12:
Take 350 to 500 micrograms (mcg) of vitamin B12 every day.
You can take B12 as an oral, sublingual (under your tongue), or nasal supplement. You may also have the option to receive a monthly shot of 1,000 micrograms of B12 from your healthcare provider.
Do not buy time-release B12.
You can take the full daily dose of B12 at one time.

Vitamin D-3
The recommended dose of vitamin D is 3,000 IU a day in liquid or gel cap form.
You can take a full daily dose of vitamin D-3 at one time.
You do not need to divide the doses throughout the day.
Be sure to count the amount of vitamin D you are getting from your multivitamin, which can contain between 500- 1000 IU (12.5 mcg to 25mcg) of vitamin D.

Calcium
You can take a supplement that has calcium and vitamin D, but count the amount of Vitamin D in the combined supplement.
Different amounts of calcium are needed based on the type of surgery you received:

- **Laparoscopic adjustable gastric banding, sleeve gastrectomy, Roux-en-Y gastric bypass:** 1,200 milligrams (mg) per day.
- **Biliopancreatic diversion, duodenal switch:** 1,800 milligrams (mg) per day

Calcium is best absorbed when it is taken in doses of less than 600 mg at a time.
You will need to take more than 1,000 mg of calcium daily, so divide your doses into two or more throughout the day.

- Take separately from multivitamins (the iron from multivitamins affects absorption)
- Allow 2-3 hours between doses; 500mg at a time
- Avoid drinking more than 16 oz. of decaf tea; the tannin in the tea decreases absorption.
- Some calcium supplements need to be taken with food. Always read the label for dosing instructions.

Protein Intake

Next to water, protein is the most abundant substance in the human body. The word “protein” is derived from the Greek word meaning “of first importance”.

Protein is the most important nutrient in the bariatric diet.

Why is protein so important?

- Protein aids in proper wound healing after bariatric surgery
- Protein helps keep your hair, skin, bones, and nails healthy
- Protein helps form hormones, enzymes, and immune system antibodies to help your body function properly
- Protein helps your body to preserve muscle while losing fat for a healthier weight loss
- Protein supports your natural metabolism

Your protein needs are based on body size. Taller people have a higher ideal body weight than shorter people. Use the table below to determine your protein needs:

60 - 80 grams per day if you are 4 foot 11 inches up 5 foot 3 inches.
80 - 100 grams per day if you are 5 foot 4 inches up to 5 foot 9 inches.
100 - 130 grams per day if you are 5 foot 10 inches up to 6 foot 4 inches.

After the initial 2-3 weeks of protein shakes only (after surgery):

- Eat protein with every meal and snack
- Eat your protein first, veggies/fruit second, and then complex carbohydrates if still hungry. Do not eat complex carbohydrates until at least 9 weeks after surgery.

Protein Shakes/Drinks

Protein drinks must have (per bottle):

- **at least 20 g protein**
- **less than 10 g of total carbohydrates**
- **less than 5 g sugar**
- **The best type of protein drinks/powders is sourced from whey, soy, or egg.**

Avoid protein drinks that have sugar alcohols (erythritol, glycerol, mannitol, sorbitol and xylitol) as these may cause severe gastrointestinal cramping.

Sweeteners that are OK: Stevia, Monk Fruit Extract, Sucarlose,

Iconic	140 Calories 20 g Protein 8 g Carbohydrates
Evolve	140 Calories 20 g Protein 7 g (net) carbohydrates
Orgain Protein Drink	150 Calories 26 g Protein 5 g (net) carbohydrates
Owyn	180 Calories 20 g Protein 5 g (net) carbohydrates
Unjury Ready to Drink Protein Shake	110 Calories 20 g Protein 2 g Carb
Premier Protein Shake (11 oz.)	160 Calories 30 g Protein 4-5 g Carb
Ensure Max Protein Shake	150 calories 30 g Protein, 6 g Carb

Protein Bars

Bars must have:

- **less than 250 Calories**
- **at least 20 g protein**
- **less than 25 g of total carbohydrates**
- **less than 5 g sugar**
- Bars should be used before surgery and should not be introduced after surgery until at least 12 weeks post-op

Think! *Available at most grocery stores*	230 Calories 20 g Protein 24 g Carbohydrates
NoGo Slim *Available at Sprouts and online*	170 Calories 17 g Protein 18 g Carbohydrates
Misfits Bar *Available online*	180 Calories 16 g Protein 15 g carbohydrates
One Protein Bar *Available at most grocery stores*	220 Calories 20 g Protein 23 g carbohydrates
Quest Bars *Available at most grocery stores*	180 Calories 20 g Protein 23 g Carb
Vital Performance Protein Bars *Available online*	230 Calories 30 g Protein 12 g Carb
Pure Protein Bars *Available at most grocery stores*	200 Calories 20 g Protein, 17 g Carb

Preparing For Surgery

Now that you have made the decision to have your surgery, it is time to ensure you have the tools for success following your surgery. We are here to help you feel confident and prepared! Below are some tips that we recommend getting started with as you prepare for surgery in the near future:

- **Chew your foods thoroughly**
  - Slow down when eating and chew your foods down to an applesauce consistency.
  - It can be helpful to cut your food down into smaller bites.
  - Not chewing your food enough could result in pain, nausea, and vomiting.
- **Eat when you are hungry and stop when you are full**
  - Try to avoid distractions at mealtime and make sure to honor your hunger.
  - Pay close attention to early signs of fullness. You do not need to feel full.
  - **Think 80% full = STOP**
- **Sip on beverages slowly and in between mealtime**
  - Drinking too soon after eating may cause pain and discomfort.
  - Wait about 30 minutes after a meal to drink a beverage.
- **Stay hydrated by keeping a water bottle with you at all times**
  - Hydration needs are individualized, however as a general rule - you should aim for at least 64 oz. of water per day.
  - Aim for 75 to 100 ounces of fluid per day (including protein drinks) to avoid constipation.
  - Avoid using straws post-surgery as they can introduce air into your stomach.
- **Pay attention to the ingredients in your beverages**
  - Slowly wean off from carbonation, caffeine, sugar, and alcohol.
  - Carbonation, caffeine, and alcohol may cause GI agitation, while added sugar may counteract weight loss.
  - Water is a great choice of beverage - sometimes adding cucumber or other fruit can add great flavor.
  - Carbonated drinks can cause gas and bloat and should NOT be used after surgery.
  - Limit coffee and caffeine drinks to one cup per day in the first few weeks. It can contribute to dehydration and can stimulate the bowel, causing cramps or diarrhea.
  - Avoid concentrated sugars and fats. They can lead to slower weight loss. Avoid high-calorie liquids and high-fat foods that can melt in your mouth such as milkshakes (no SLIDER foods). These foods may cause dumping syndrome.

Preparing For Surgery (continued)

- **Experiment with different protein shakes and protein powders**
  - Choose a protein shake that contains at least 20-30 grams of protein per serving.
  - ***See the page on protein shakes for more information on page 27**
- **Start exercising before surgery**
  - Get into the habit of exercising prior to surgery so that it is already a part of your routine. Assess where you are at and see what type of exercise you can add to your routine.
  - The Physical Activity Guidelines for Americans recommends getting at least 150 minutes of moderate aerobic activity per week. Strength training is also extremely beneficial for maintaining lean muscle mass.
- **Establish support**
  - Find support through your friends, family, online groups, and your care team.

Preparing for Surgery 2 Weeks Pre-Op

Clear liquids and protein drinks are recommended for the 2 weeks prior to bariatric surgery and 2 weeks after bariatric surgery. A clear liquid diet consists of both clear liquids and clear foods that turn to liquid at room temperature.

Not allowed: Milk, tomato juice, and fruit juices, fruit

Allowed: sugar-free, calorie-free, non-carbonated drinks

Examples:

• Water or water with Stur or Sweet Leaf flavor drops
• Sugar-Free Sports drinks such as Bai, Powerade Zero, Gatorade Zero, Propel
• Vitamin Water Zero
• Sugar-free freezer popsicles without pieces of fruit in it
• Sugar-free Jello
• Fat-free broth
  - Bone broth is also a great source of protein
• Black decaffeinated coffee- may add a sugar substitute such as stevia or Monk fruit extract
• Unsweetened decaffeinated tea/diet tea

Fluid goal:

At least 64 ounces of water per day (about 4 bottles of 16oz of water) is recommended

Drink, drink, drink!

- Sip fluids throughout the day and avoid gulping.
- Do not use straws.
- Do not drink during meals and wait 30 minutes after meals before drinking fluids.
- Signs of dehydration:
  - Dry, sticky mouth
  - Sleepiness or tiredness
  - Headache
  - Extreme thirst
  - Irritability and confusion
  - Sunken eyes
  - Dry skin that doesn’t bounce back when you pinch it

2 Week Pre-Op Sample Meal Plan

8:00 AM	1 Protein Drink Multivitamins, B-12, Vitamin D-3, Iron (if taking)
9:00 AM	8 ounces water
10:00 AM	8 ounces water/fluid, 1 protein bar (optional)
11:00 AM	8 ounces water/fluid
12:00 PM	1 Protein Drink, Calcium Supplement
1:00 PM	8 ounces water/fluid, 4 ounces sugar free jello
2:00 PM	8 ounces water/fluid
3:00 PM	1 Protein Drink or Protein Bar, Calcium supplement
4:00 PM	8 ounces water/fluid
5:00 PM	8 ounces water/fluid
6:00 PM	3-5 ounces lean protein (baked, broiled, grilled, boiled), ½-2 cups non-starchy vegetables NO corn peas beans, lentils, or potatoes NO bread/pasta/rice/fruits 1 serving of fat is allowed (1 tsp oil or 1 Tbsp salad dressing)
7:00 PM	Sugar Free Popsicle
8:00 PM	8 ounces water
Nutrition Goals:	Fluid: 72 ounces Protein: 60 to 130 g

Day Before Sample Meal Plan

8:00 AM	1 Protein Drink Multivitamins, B-12, Vitamin D-3, Iron (if taking)
9:00 AM	8 ounces water
10:00 AM	8 ounces water/fluid. Sugar Free Jello
11:00 AM	8 ounces water/fluid
12:00 PM	1 Protein Drink, Calcium Supplement
1:00 PM	8 ounces water/fluid
2:00 PM	8 ounces water/fluid
3:00 PM	Sugar Free Popsicle
4:00 PM	8 ounces water/fluid
5:00 PM	8 ounces water/fluid
6:00 PM	1 Protein Shake 3rd calcium supplement if needed
7:00 PM	8 ounces fat free broth
8:00 PM	8 ounces water
Nutrition Goals:	Fluid: 72 ounces Protein: 60 to 80 g

0-3 Days Post-Surgery

- Aim to sip 1 ounce of liquids every 15 minutes while awake in order to get a minimum of 64 ounces of fluids per day
  - You may want to use a small medicine cup to control the amount.
- Clear liquids (non-carbonated, caffeine-free, sugar-free) can include:
  - Bone broth or chicken/vegetable broth
  - Clear protein drinks
  - Water
- Avoid extremely hot or cold liquids until your stomach fully heals, usually around six weeks.
- Be sure to get up and move around as much as possible

1-3 Weeks Post-Op Sample Meal Plan

8:00 AM	1 Protein Drink Multivitamins, B-12, Vitamin D-3, Iron (if taking)
9:00 AM	4 ounces water
10:00 AM	8 ounces chicken or bone broth
11:00 AM	8 ounces water/fluid
12:00 PM	1 Protein Drink, Calcium Supplement
1:00 PM	8 ounces water/fluid
2:00 PM	8 ounces water/fluid
3:00 PM	4 ounces water/fluid
4:00 PM	8 ounces water/fluid
5:00 PM	8 ounces water/fluid
6:00 PM	1 Protein Shake 3rd calcium supplement if needed
7:00 PM	8 ounces chicken or bone broth
8:00 PM	8 ounces water
Nutrition Goals:	Fluid: 72 ounces Protein: 60 to 80 g

Soft Proteins

Start to replace protein drinks with soft, semi-solid protein sources.

Protein Examples

- low-fat cheese or cottage cheese
- light yogurt (less than 20g total carbs per serving)
- eggs white or egg beaters
- beans, lentils
- tofu
- fish
- chicken or tuna salad made with light mayo
- lean meat or chicken cooked in broth or vegetable juices
- ground lean meats (90% or higher for the lean protein-to-fat ratio)
- Consume moist, soft, ground, diced, or pureed proteins at least 3 - 6 times per day as tolerated for 1 week after the liquid diet
- **Chew, chew, chew!**
    - You cannot over chew your food. In this early stage, the muscles in your smaller stomach are not strong enough to properly grind down your food.
    - If you are not a good chewer, grind or even puree your food.
    - To puree foods: Remove skins/cook food if needed.
    - Cut into small, dime-sized pieces and place into a blender.
    - Add liquid (broth, skim milk, or water). Pulse until smooth or applesauce consistency.
    - In place of skipping meals, consume a protein drink.
    - Cooking meat in a slow cooker is helpful.
    - Choose low-fat dairy products with close to a 1:1 carbohydrate to protein ratio.

3 Weeks Post-Op Sample Meal Plan

8:00 AM	3 Tbsp. Egg Whites Multivitamins, B-12, Vitamin D-3, Iron (if taking)
9:00 AM	8 ounces water
10:00 AM	1 Protein Drink
11:00 AM	8 ounces water/fluid
12:00 PM	¼ - ½ cup tuna or chicken salad with light mayo Calcium supplement
1:00 PM	8 ounces water/fluid
2:00 PM	8 ounces water/fluid
3:00 PM	½ cup unsweetened Greek yogurt
4:00 PM	8 ounces water/fluid
5:00 PM	8 ounces water/fluid
6:00 PM	½ salmon fillet Calcium supplement
7:00 PM	8 ounces water
8:00 PM	½ cup low fat cottage cheese; 3rd calcium if needed
Nutrition Goals:	Fluid: 72 ounces Protein: 60 to 80 g

4-6 Weeks Post-Op Sample Meal Plan

8:00 AM	3 Tbsp. egg whites, 1/2 cup applesauce Multivitamins, B-12, Vitamin D-3, Iron (if taking)
9:00 AM	8 ounces water
10:00 AM	1 Protein Drink
11:00 AM	8 ounces water/fluid
12:00 PM	1/4-1/2 cup tuna or chicken salad (light mayo), 1/2 cup cooked carrots; Calcium supplement
1:00 PM	8 ounces water/fluid
2:00 PM	8 ounces water/fluid
3:00 PM	8 ounces water/fluid
4:00 PM	8 ounces water/fluid
5:00 PM	8 ounces water/fluid
6:00 PM	1/2 tilapia fillet, 1/2 cup well-cooked zucchini Calcium supplement
7:00 PM	8 ounces bone broth
8:00 PM	1/2 cup cottage cheese, 1/2 cup canned peaches in own juices 3rd calcium if needed
Nutrition Goals:	Fluid: 72 ounces Protein: 60 to 80 g

6-12 Weeks Post-Op Sample Meal Plan

At 9 weeks post-op, your dietitian will work with you to determine if it is the right time to introduce small amounts of starches or grains.

8:00 AM	½ cup unsweetened Greek yogurt with ½ cup blueberries Multivitamins, B12, vitamin D, Iron (if taking)
9:00 AM	8 ounces water
10:00 AM	8 ounces water/fluid, Sugar Free Jello
11:00 AM	8 ounces water/fluid
12:00 PM	3 oz grilled salmon, 1/2 cup zucchini Calcium supplement
1:00 PM	8 ounces water/fluid
2:00 PM	8 ounces water/fluid
3:00 PM	½ cup cottage cheese, ½ cup canned peaches in own juices
4:00 PM	8 ounces water/fluid
5:00 PM	8 ounces water/fluid
6:00 PM	3 oz grilled chicken, ½ cup cooked spinach, 1/2 cup peas Calcium supplement
7:00 PM	8 ounces chicken or bone broth
8:00 PM	1 low fat cheese stick, 1 small orange 3rd calcium if needed
Nutrition Goals:	Fluid: 72 ounces Protein: 60 to 80 g

Supplement Schedule

Protein	• Eat high-protein, low-fat foods • Supplement with protein powder (whey or whey/soy isolate) in milk or water • Aim for an intake of 60 g protein to 130 g of protein per day (this will be assigned by your dietitian)
Calcium	• For laparoscopic adjustable gastric banding, sleeve gastrectomy, Roux-en-Y gastric bypass: **1,200 mg a day** • Biliopancreatic diversion, duodenal switch: **1,800 mg per day** • Take calcium supplements separately from iron supplements and iron-containing foods (approximately 2 hours between dosages) • Doses should be separate; calcium carbonate should be taken on an empty stomach, and calcium citrate with meals
Vitamin B12	Your healthcare provider will monitor vitamin B12 levels and prescribe appropriate supplementation. Forms of supplementation include sublingual oral, oral dissolving tablet, nasal spray, or a monthly injection.
Vitamin D	• Vitamin D supplements (total of 3,000 international units daily, comprising all supplements including calcium and vitamin D) • If vitamin D3 is deficient, 50,000 international units of ergocalciferol (vitamin D2) one time a week for 8 weeks followed by maintenance therapy of 1500-2000 IU/day to achieve normal concentrations is recommended. (Dagan, 2017)
Iron	• Take iron separately from calcium to maximize absorption • Avoid foods that contain oxalates (such as spinach, almonds, beets, and raspberries) when taking iron supplements • Menstruating females and patients who have undergone RYGB, SG, or BPD/DS should take at least 45-60 mg of elemental iron daily for maintenance. Include iron from all vitamin and mineral supplements. • Iron supplements are best taken with vitamin C to maximize absorption. • Report GI symptoms, including nausea and constipation, if they occur.
Multivitamin	• Take two multivitamins daily that include iron and folate for maintenance. Chewable or liquid forms are recommended for the first month. No gummy vitamins permitted. • Bariatric surgery-specific vitamins have been formulated and are commercially available. Check with a healthcare professional to carefully evaluate products to ensure you are meeting your supplementation needs.

Supplement Recommendations

Below are suggestions for a few common supplement brands. This is not a comprehensive brand. It is important any supplement you choose meets the required dosages. Please check with your surgeon or dietitian before purchasing supplements.

Multivitamin with Iron

- Centrum adult chewable- available at most drugstores
- Flintstones Complete chewable with Iron- available at most drugstores
- CVS Spectravite Chewable or Liquid- available at CVS
- Walgreens Complete multivitamin/multimineral supplement liquid- available at Walgreens
- Bariatric Fusion multivitamin capsules- available at bariatricfusion.com or

• MC Restrictive 18- available at celebratevitamins.com
• Bariatric Advantage- available a bariatricadvantage.com

Vitamin B12

• Nature Made sublingual B12- available at most drugstores
• Spring Valley sublingual B12- available at most drugstores

Vitamin D3

- Nature Made Vitamin D3 2000IU softgel- available at most drugstores
- Nature's Bounty 2000IU softgel- available at most drugstores
- Puritan's Pride chewable- available at puritan.com
- Liquid form available at most drugstores

Calcium Citrate w/ Vitamin D

• Chewable Calcium citrate with Vitamin D - available at bariatricadvange.com, celebratevitamins.com, bariatricfusion.com; may be able to find some chewable forms in drugstores locally- look for calcium CITRATE
• Equate Calcium Citrate plus D3 Petites tablets- available at Walmart

Iron

• Chewable iron supplements available at bariatricadvange.com, celebratevitamins.com,, bariatricfusion.com
• Liquid iron supplements at some drugstores
• Spring Valley Iron tablets- available at most drugstores

Introducing Fruits and Vegetables

Introduce fruits and vegetables AFTER comfortably eating soft, moist protein foods.

- Introduce soft, moist, well-cooked non-starchy vegetables FIRST, then soft, moist fruits.
- Avoid fruits and vegetables that are stringy and fruits with skins, seeds, or membranes.
- Always eat protein foods first.
- Introduce only one food at a time.
- Examples of vegetable choices all cooked to a soft texture:
  - Broccoli
  - Cauliflower
  - Carrots
  - Green beans
  - Zucchini (peeled)
  - AVOID CORN AND RAW LEAFY GREEN VEGETABLES AT THIS STAGE
- Examples of soft fruits
  - Melon
  - Cantaloupe
  - Peeled apples or unsweetened applesauce
  - Peeled pears
  - **TIP:** When trying a new food for the first time after surgery, make sure you are at home in case you do not tolerate it!

Guidelines:

- Meet 100% of your fluid and protein goals.
- Track everything you eat to ensure you are eating enough protein.
- Continue to wait 30 minutes after meals to drink fluids.
- Try to pair a protein food with a vegetable or fruit at meals and snacks.
- Protein drinks if needed. Drink a protein drink instead of skipping meals.
- Meats should be tender and moist. No tough, dry red meat. Do not fry meats.
- Chew foods to applesauce consistency.
- Swallow and breathe before taking the next bite.
- If food feels stuck, do not drink fluids. Instead, walk around until the feeling subsides.
- Stop eating at the first sign of fullness.
- Do not force yourself to eat more.
- Avoid processed foods, fast food, convenience foods, “snack” foods, fried foods, simple sugars, concentrated sweets, high calorie beverages, etc.

Helpful Nutrition Tips

- Pay attention to your body and stop eating at the first sign of fullness.
- Chew foods well to applesauce consistency, swallow & breathe before taking the next bite.
- Leftovers can be saved for the next meal or snack.
- Avoid starches such as untoasted bread, rice, cereals, and pasta.
- Avoid raw fruits and vegetables with high fibrous consistency (celery stalks, corn, artichokes, tomatoes, pineapple, oranges); may consume these pureed, or well-cooked.
- If food feels stuck, do not swallow fluids and instead walk around.
- Take all recommended vitamins and minerals (multivitamins, vitamin B12, vitamin D3, Calcium Citrate with Vitamin D, and Iron if needed).
- Track your daily food intake with either food logs or with apps such as “Lose it,” “MyFitness Pal,” or “Baritastic”.
- Avoid high-calorie beverages (juice, milkshakes, soda, sweet tea, lemonade).
- Do not chew gum or suck on hard candy as these can obstruct your outlet if swallowed.
- If constipated, you may need a fiber supplement (Benefiber).
- Avoid excessive amounts of caffeine and alcohol as these can cause gastric irritation. Alcohol is not recommended for up to a year after surgery.
- Try to have regular meals and avoid grazing; eat 3 to 6 small frequent meals per day.
- Meals should always include protein, followed by vegetables or fruit, and then finally whole grains (such as whole grain toast, oatmeal, cream of wheat).
- Focus on eating your protein FIRST.
- Raw vegetables and salads are best tolerated 3 months after surgery.
- Remember that protein shakes are meal replacements. Do not drink them in addition to meals.
- Avoid foods with more than 2g of sugar alcohol (sorbitol, mannitol, xylitol, erythritol) per serving. These may contribute to excessive gas, bloating, and/or diarrhea.

Dumping Syndrome

- Caused by the fast rate of emptying ("dumping") of sugary/fatty foods/fluids from the pouch into the “rerouted” small intestine without being properly digested

- Symptoms may include: cramping, vomiting, diarrhea, rapid heartbeat, and/or sweating

- Look for products that are less than 10 g of sugar and less than 5 g of fat
  - Avoid foods like ice cream, cake, cookies, sweet tea, sugar, candy, fried food

- Yogurt, milk, and fruit all have natural sugar; these will not cause dumping syndrome when consumed in moderate amounts

- Two types of dumping:
  - Early dumping: occurs 10-30 minutes after a meal
  - Late dumping: occurs 1-3 hours after a meal

- Treatment:
  - Separate liquids from mealtime
  - Eat smaller meals
  - Lie down after a meal to help control the symptoms
  - Choose complex carbohydrates such as whole grains over simple carbohydrates
  - Addition of more protein and fat to your meals
  - Chew your food

- Talk to your healthcare provider if you experience symptoms of dumping syndrome

Hormones and Hunger

Leptin is considered a “satiety hormone” that reduces appetite and makes you feel full. As a signaling hormone, its role is to communicate with the hypothalamus, the portion of your brain that regulates appetite and food intake. Unfortunately, in obesity, the leptin system does not work as well as it should. This is referred to as leptin resistance.

Here are a few suggestions for improving leptin sensitivity:

- Avoid inflammatory foods: Limit foods that cause inflammation, especially sugary drinks, and trans fats.
- Eat certain foods: Eat more anti-inflammatory foods, such as fatty fish.
- Exercise regularly: Moderate activity can improve leptin sensitivity.
- Get enough sleep: Studies have shown that insufficient sleep leads to a drop in leptin levels and increased appetite.
- Supplements: Not only is correcting any deficiencies medically important to your overall health, but these deficiencies may also be a contributing factor to obesity and pre-diabetes.

Ghrelin is known as a “hunger hormone.” When your stomach is empty, it releases ghrelin, which sends a message to the hypothalamus telling you to eat. However, in overweight and obese people, fasting ghrelin levels are often lower than in people of normal weight. Studies have also shown that after obese people eat a meal, ghrelin only decreases slightly. Because of this, the hypothalamus doesn’t receive as strong of a signal to stop eating, which can lead to overeating.

Here are a few tips to improve the function of ghrelin:

- Sugar: Avoid high-fructose corn syrup and sugar-sweetened drinks, which can impair the ghrelin response after meals.
- Protein: Eating protein at every meal, especially breakfast, can reduce ghrelin levels and promote satiety.

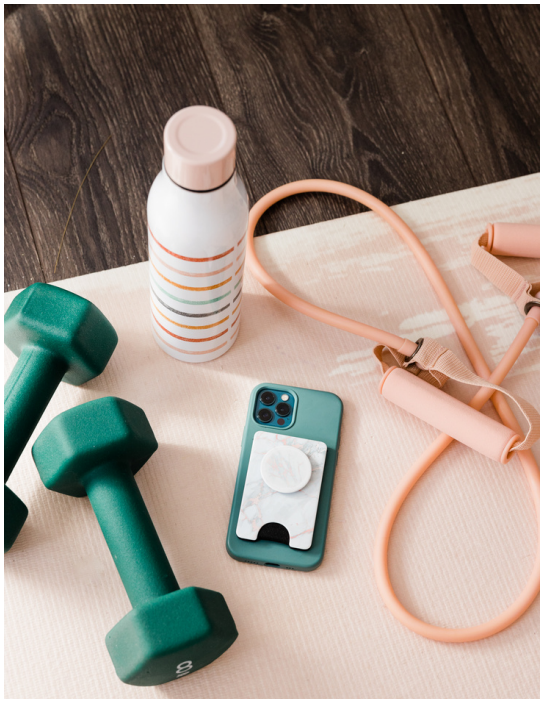
Physical Activity

Physical activity preserves lean body mass and decreases the risk of blood clots.

- Start walking on the day of surgery, increasing as tolerated
  - The goal is 30-60 minutes, 5 times per week
- Add resistance training after being cleared by your surgeon
  - The goal is 2-3 times per week
- Move frequently throughout the day in accordance with medical advice regarding your history of knee pain/surgeries.

Remember: Even 5 minutes of movement every hour while awake can add up to a total of 60 mins or one full hour of exercise daily in a 12-hour day! Just do anything you can and do it daily in small increments.

Your muscles need the energy to work or exercise. To feed your muscles, your body burns sugar as an energy source, which in turn lowers the sugar levels in your blood. When you exercise regularly, it helps your body use insulin more efficiently which can lower your blood sugar levels for up to 12 hours after you exercise!



Tips for Lifelong Success

Surgery will help you control the number of calories you consume by making it difficult for you to eat large portions of food at one time. **However, it is still possible for people to overeat and gain weight by eating and/or drinking high-calorie items throughout the day.** This behavior is sometimes referred to as grazing. Try some of these eating tips to stay on track:

- Keep nibbling (grazing) to a minimum. Continuous nibbling and snacking on high-calorie foods and beverages can cause you to gain weight.
- Do your best to make healthy choices. Follow a balanced meal plan with adequate protein and fluids, and a daily intake of vegetables, fruit, and healthy fats.
- Be aware of why you are eating. Eating because of boredom, depression, anxiety, happiness, or just something to do can result in weight gain.
- Some people find it helpful to involve a therapist to help deal with emotional dependence on eating.
- Practice mindful eating. Be “present” when eating; slow, purposeful chewing; pay attention to the taste, and texture; awareness of your level of hunger and fullness.
- Eat slowly and listen to your body. Stop eating when you are no longer hungry, instead of when you are full.
- Don’t eat while distracted by the television, phone, or computer.
- Eat at regular times throughout the day to avoid feeling deprived/famished
- Avoid drinking fluids with meals; wait 20-30 minutes after meals for the pouch or sleeve to empty.
- Stay active. Exercise helps control your appetite, can relieve stress, and can improve your quality of life in general.
- Take your vitamins. After surgery, you will be on a diet that cannot meet your needs for all vitamins and minerals. Be sure to take your recommended supplements every day, even if you feel good!
- Go grocery shopping with a list and stick to the list.
- Avoid high-calorie fluids including regular juices, soft drinks, and whole milk.
- Have nutrition-related laboratory values checked annually.
- Attend ALL follow-ups with your dietitian.

Eating Out

- Ask, ask, ask as much as you can about how the food you're ordering will be prepared. Restaurants are notorious for dousing even the simplest things in spices, salts, and marinades before cooking. Plain baked potatoes are often rolled in salt before baking which seems unnecessary.
- Locally-owned restaurants tend to be low-volume and usually cook food to order, so they usually have a tendency to be more accommodating to customer requests. Don't hesitate to ask questions or request your food to be prepared plain.
- Pass on the sauce that accompanies your entry or ask for it to be served on the side. Many sauces are high in sodium and not worth the negative health effects they can lead to.
- Stick to the basics when it comes to healthy proteins that are grilled, baked, or roasted, and steer clear of casseroles and pasta dishes. These dishes tend to be high in fat and sodium, and can really thwart your post-surgery weight loss success.
- Taste your food before you reach for the salt shaker. Often, food already has enough taste and doesn't need additional salt, but people never know because they sprinkle salt on it before even trying the food.
- Skip condiments such as ketchup, mustard, and salsa. They may be low in calories but all contain high amounts of sodium, so it's best to use them sparingly.

- **A note on alcohol:**
  - Alcohol is a gastric irritant and causes stomach discomfort and pain. It can be very high in calories, especially when mixers are used; these are empty calories with no nutritional value and can lead to weight gain.
  - It may also increase the risk of ulcer formation. Alcohol metabolism is altered after surgery, and you may get intoxicated very quickly. It is recommended to avoid alcohol after surgery. For your safety, if you choose to have alcohol after surgery, make sure the first time you drink, you are at home and with someone who can help if needed.

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