

# Nutrition Guide

## For Metabolic and Bariatric Surgery

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**Fresno Bariatrics**  
**Advanced Laparoscopic Surgical Associates**  
**Fresno Heart and Surgical Hospital**



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## Introduction

Congratulations on your decision to pursue a healthier lifestyle through metabolic and bariatric surgery. We are committed to helping you through this life-changing, challenging, but ultimately rewarding experience. Our goal is to make sure you are ready and thoroughly prepared for surgery.

This guide will help prepare you for what lies ahead. Keep in mind, these are guidelines; it is not a substitute for the individualized treatment you will receive as an ALSA patient. You have a team of physicians, nurses, psychologists and dietitians specially trained and committed to helping you obtain the best possible outcomes.

You already know that traditional diet and exercise programs can help with weight loss, but keeping weight off is more important than these short-term victories.

Many of you are already eating mindfully, exercising and optimizing a healthy lifestyle, and yet, your weight does not budge. That is the concept of “set-point”- a predetermined weight and body fat content beyond your control. Surgery can reset your set-point, whereas traditional diet and exercise programs do not. It’s time to try something new!

Bariatric surgery is effective, not because it forces you to eat less, but because it allows you to lose weight without your body opposing the weight loss. However, keep in mind that if your lifestyle, food choices, eating habits and exercise regimen do not change, you may wind up where you started.

Metabolic and Bariatric surgery is an amazing tool, but to get the best results, is important you know how to use it properly. It is essential that you follow the nutritional plans that are outlined in this handout. Your team: doctor, nurse, psychologist, and dietitian are available to answer questions and provide any other support you may need.

Working together, we can help you on your journey to a healthier life.



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## Preparing for Surgery

Before surgery, there are many behaviors that can ensure you have a smooth transition to your post-operative life. One suggestion is to begin journaling what you are eating and drinking. Downsizing your meals is also a good place to start; try to be mindful of what and why you are eating. Taking smaller bites, eating slowly, and using internal cues instead of external ones will lead to more enjoyment and satisfaction with meals. Making small changes, one at a time, can help you to develop new habits. Taking a look at your sleep pattern is also helpful, since sleep deprivation can lead to weight gain, increased stress and reduced ability to fight disease.

**“There are many behaviors that can ensure you have a smooth transition to your post-operative life”**

Beginning an exercise routine will also lead to a healthier lifestyle. Try adding a short walk, using a resistance band, or parking further away from stores. In addition to surgery, it's important to remember it will be your food and exercise habits that will determine your level of success with weight loss and weight maintenance.

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# How Normal Digestion Works

Digestion begins in the mouth as food is chewed, breaking it down into simpler nutrients that can be used by the cells. Saliva contains an enzyme (amylase) that when mixed with the food begins the breakdown of carbohydrates. The food is then swallowed and travels into the stomach. Typically the stomach stores food for up to four hours and initiates digestion by breaking down protein and killing bacteria with strong acidic gastric juice. From here, it moves into the first part of the small intestine. The *duodenum* functions to break down food into simple nutrients and absorb a variety of nutrients, including iron and

calcium. The next stop is the *jejunum*, which functions to absorb our nutrients. Digestion continues in the ileum and finishes in the large intestine with a bowel movement.

Digestion is also not as simple as calories in/calories out. Your digestive tract is a complex system of hormones, bile acids and involves the interaction of food with your gut microbacteria. What researchers are now proving is something we have known for decades: obesity is not your fault. It is not due to lack of self-control, lack of exercise, gluttony, laziness or mental illness. It is a disease, and like many diseases, poorly understood, but treatable.

## How Will Digestion Work After Metabolic and Bariatric Surgery?

The most common operations include the Roux-en-Y Gastric Bypass (RYGB), Sleeve Gastrectomy (SG), Duodenal Switch (DS) and adjustable gastric band (AGB). With any surgery, it is important to realize that every patient can have, and will have, a different response to the operation. In other words, no one's physiology is the same; what works for one person may not for another.

AGB does not involve removing part of the stomach or an intestinal bypass. It can be very effective, but its results are often sporadic and very few centers currently offer this operation.

The gastric bypass and sleeve gastrectomy are both metabolically active and work through both hormonal signaling to the brain as well as bile acids and other unknown

mechanisms to produce a feeling of satiety (or lack of hunger) as well as increasing one's metabolic rate.

These operations do not restrict intake as much as they effect the desire to eat. Malabsorption is not an important mechanism of weight loss, but can lead to nutritional deficiencies and other serious issues.

With all surgeries, it's important to chew food thoroughly and take vitamin and mineral supplements to prevent nutritional deficiencies that may result from smaller portions and/or the malabsorptive effect of surgery. Iron, Calcium, Vitamin D, Vitamin B12 and Folate are the most common nutrient deficiencies observed after weight loss surgery.

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# A Glance at Nutrition

Food serves as an important vehicle for taking nutrients into the body. Food is broken down into specific nutrients that the body requires. These nutrients, known as *macronutrients*, include carbohydrates (simple and complex sugars), fats (fatty acids) and proteins (amino acids). Vitamins and minerals are examples of *micronutrients*.

## Protein



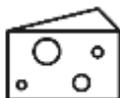
Helps build, maintain and repair body tissue. Research shows that an intake of at least 60 grams of protein per day is associated with better preservation of lean body mass for gastric bypass and sleeve gastrectomy patients.

## Carbohydrates



These provide energy. Nutrient-dense carbs, such as whole grains, fruits & vegetables, legumes and low fat dairy are recommended. Foods high in sugars are discouraged due to lack of nutrients and intolerance.

## Fat



Provides energy and fat-soluble vitamins (Vitamin A, D, E and K). Provides essential fatty acids (Linoleic and Linolenic).

## Water



Supports all body functions. It carries nutrients through the body and removes waste.

**Protein and water will be the most important nutrients you consume after your surgery. Protein is necessary to help heal and preserve muscle tissue while you're losing weight. A lack of fluid can result in dehydration.**

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## About Protein

Although it is rare to see protein malnutrition with RYGB and SG surgeries, adequate protein is important for healing and preserving lean body mass (muscle). When consuming your meals, focus on eating protein foods first to ensure you meet your protein needs. We suggest a goal of 60gm/day for women, and 80gm/day for men. Ideally, your protein will be spread evenly throughout the day. Remember, a good source of protein is between 5-10 grams per serving. The following list is provided to help improve your knowledge of good protein sources.

| <b>Food Category</b>                | <b>Serving Size</b>   | <b>Protein</b> |
|-------------------------------------|-----------------------|----------------|
| <b>Meat/Vegetable Group</b>         |                       |                |
| Meat, fish, poultry                 | 1 ounce cooked        | 7 grams        |
| Tuna, packed in water, drained      | 1 ounce               | 7 grams        |
| Beans (lima, kidney, baked)         | ½ cup                 | 6-7 grams      |
| Beans (white or navy)               | ½ cup cooked          | 9 grams        |
| Lentils                             | ½ cup                 | 9 grams        |
| Egg                                 | 1 whole               | 6-7 grams      |
| Egg substitute                      | ¼ cup                 | 7.5 grams      |
| <b>Dairy Group</b>                  |                       |                |
| Fat-free milk                       | 1 cup (8 fl oz.)      | 8 grams        |
| 1% Light milk                       | 1 cup                 | 10 grams       |
| Lactose-free milk - Fat free        | 1 cup                 | 9 grams        |
| Lactose-free milk - 1%              | 1 cup                 | 8 grams        |
| Non-fat dry milk powder             | 1/4 cup               | 11 grams       |
| Greek/low-fat yogurt, plain         | 1 container (8 ounce) | 8-13 grams     |
| Low-fat cottage cheese              | ½ cup                 | 15.5 grams     |
| Low-fat cheese                      | 1 ounce               | 7 grams        |
| <b>Miscellaneous</b>                |                       |                |
| Peanut butter (smooth, low-fat)     | 2 tablespoons         | 7 grams        |
| Nuts (cashews, walnuts, mixed)      | 1 ounce               | 4-5 grams      |
| Nuts (peanuts, pistachios, almonds) | 1 ounce               | 6 grams        |
| Pumpkin seeds                       | 1 ounce               | 7-8 grams      |
| Sunflower seeds                     | 1 ounce               | 5-6 grams      |
| Tofu, soybean product               | ½ cup, raw, firm      | 10 grams       |
| Soybeans                            | ½ cup                 | 11 grams       |
| Vegetable/soy patty                 | 1 patty               | 11 grams       |
| Soy milk                            | 1 cup (8 fl oz.)      | 7-8 grams      |
| *Almond milk                        | 1 cup (8 fl oz.)      | 1 gm           |
| *Rice milk                          | 1 cup (8 fl oz.)      | 1 gm           |

*\*Not recommended due to low protein content*

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## Understanding Ingredient Lists

By using the information on food labels, you will be able to make the best possible choice with regard to your new dietary goals. We strongly encourage you to make label-reading a part of your new shopping habits. There are (2) sources of information available on labels; ingredient lists and the nutrition fact panel.

Ingredient declaration is required on all foods that have more than one ingredient. The ingredients are listed in order of predominance by weight; so the ingredient that weighs the most is listed first and the ingredient that weighs the least is listed last. The common or usual name for ingredients is listed unless there is a regulation that provides for a different term.

Protein may be listed on labels as caseinate, whey, soy, pureed meat or individual amino acids. Fat may be listed as partially-hydrogenated oil, soy, canola, corn, sunflower, safflower or medium chain triglyceride oils. Carbohydrates have many different names. Be sure to read ingredient lists to look for foods with high sugar content. The scientific names for sugars often end in “ose.” The following list provides different names of sugars. If these ingredients are listed within the first five, it’s probably a significant source of sugar and should be avoided.

### Hidden Sugars

- Sucrose
- Dextrose
- Maltose
- Fructose
- Lactose
- High Fructose Corn Syrup
- Dextrin
- Agave Nectar
- Crystallized Cane Sugar or Juice
- Molasses
- Turbinado
- Corn Sweetener
- Malt
- Honey
- Fruit Juice Concentrate
- Evaporated Cane Sugar

### Sugar Substitutes

Sugar substitutes can be tolerated by most patients after surgery and contain little to no calories. However, using high amounts of these sweeteners is not recommended long term because repeated exposure may create a preference for sweetness. Here are some examples:

- Splenda® (Sucralose)
- Equal® (Aspartame)
- Sweet-N-Low® (Saccharin)
- Stevia® (herbal supplement) – Truvia

### Sugar Alcohols

These are a type of reduced calorie sweetener (1/2 the calories of regular sugar). In some people, they can have a laxative effect, or other gastric symptoms, so you may want to check the ingredient list. You might see them listed as Sorbitol, Mannitol, Erythritol, or Xylitol.

## How Do You Read A Food Label?

A Nutrition Facts Panel is a requirement on most foods. It gives specific nutrient and caloric information. Here's how to read it:

| <b>Nutrition Facts</b>   |                      |
|--|----------------------|
| 8 servings per container   |                      |
| <b>Serving size</b>  | <b>2/3 cup (55g)</b> |
| <b>Amount per serving</b>  |                      |
| <b>Calories</b>  | <b>230</b>           |
| <b>% Daily Value*</b>  |                      |
| <b>Total Fat</b> 8g  | <b>10%</b>           |
| Saturated Fat 1g   | <b>5%</b>            |
| Trans Fat 0g   |                      |
| <b>Cholesterol</b> 0mg   | <b>0%</b>            |
| <b>Sodium</b> 160mg  | <b>7%</b>            |
| <b>Total Carbohydrate</b> 37g  | <b>13%</b>           |
| Dietary Fiber 4g   | <b>14%</b>           |
| Total Sugars 12g   |                      |
| Includes 10g Added Sugars  | <b>20%</b>           |
| <b>Protein</b> 3g  |                      |
| Vitamin D 2mcg   | <b>10%</b>           |
| Calcium 260mg  | <b>20%</b>           |
| Iron 8mg   | <b>45%</b>           |
| Potassium 235mg  | <b>6%</b>            |
| <small>* 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.</small> |                      |

### Serving Size

Based on the amount of food that people typically eat. The nutrition information is based on one serving size only. Remember, you will be eating much smaller portions so the nutrition information will need to be adjusted.

### The Nutrients

- **Look for items high in protein. A good source of protein is 5 – 10 grams per serving.**
- **Most gastric bypass patients can tolerate 10 to 15 grams of sugar per serving.**
- % Daily Values are average levels of nutrients for a person eating 2,000 calories per day. Daily values are for the entire day, not just a meal.
  - Remember, you will need less than 2,000 calories per day after surgery.
  - 5% or less is low - try to aim low for saturated fats, trans fats, cholesterol and sodium.
  - 20% is high - try to aim high for vitamins, minerals and fiber.

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# Dietary Guidelines After Surgery

You will find many post-operative diets on the internet, as well as well-meaning advice from friends and family. However, this information may not always align with the recommended progression at ALSA Medical Group. By following the diet stages listed here, you will increase your chances of avoiding any discomfort, complications such as blockages or leaks, and allow your body to heal from surgery.

## Clear Liquids Diet – Week 1

At the hospital following surgery you will be started on a Clear Liquids diet. Your goal will be to consume 48-64oz of fluid each day. At first, you will be comfortable with just a few sips at a time. Experiment with various temperatures to see what works best for you. Your liquid diet may include beverages such as:

### Recommended Foods:

- \*Clear Protein Beverage (such as Premier Protein Clear, Isopure, BiPro, or Bariatric Advantage Clear Protein) – 20 to 40 grams of protein per serving
- \*Bone Broth – 10g grams of protein per serving
- Broth – Chicken, Beef, Vegetable
- Sugar-Free Gelatin (Jell-O®)
- Sugar-free Popsicles
- Decaffeinated coffee/tea (no creamer)
- Sugar-free Life Water
- Water
- Unflavored Coconut Water
- Crystal Light®
- Propel Zero®
- Powerade Zero® or Gatorade Zero®
- Sugar-free Vitamin Water®
- \*\*Diluted Juice – Apple, Grape, Cranberry (half juice, half water)
- \*\*G2® (low sugar Gatorade)
- \*\*Diluted Gatorade® (half Gatorade / half water)

For some patients, plain water may be a problem, but is often better-tolerated if “flavored” with some lemon juice or Crystal-Light® mix. In order to prevent dehydration, you should sip liquids throughout the day, with a goal of at least 6-8 cups (48-64 ounces) of fluid each day. Alternate between the items listed above.

\* We recommend 2 servings (8oz each) of low sugar, clear protein beverages daily during this stage.

\*\* These beverages contain carbohydrate. Consuming 2-3 servings (16-24oz) of low sugar beverages each day will maintain your energy level and keep you from feeling tired or weak during this diet stage.

\*\*\* If you are tolerating Clear Liquids for one week, you may advance to the Full Liquids diet.

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## **Full Liquids Diet – Week 2**

If you are tolerating Clear Liquids after one week, you may advance to the Full Liquid diet. The Full Liquids diet provides liquids/foods that are easy to consume and digest. Most patients can comfortably tolerate 3-4oz (1/3-1/2 cup) portions per meal, 3 meals per day at this stage. You should continue to consume 48-64oz of clear liquids that are caffeine-free, non-carbonated, and sugar-free (or low sugar) to avoid discomfort and ensure adequate hydration.

***Note: You should now avoid drinking with your meals and wait 30 minutes after your meals to resume drinking your fluids.***

***\*You may begin taking your chewable multi-vitamin and sublingual vitamin B12 at Week 2.***

### **Recommended Foods:**

- Soups: tomato, butternut squash; pureed split pea, vegetable or lentil
- Cream of Wheat (thinned)
- Low sugar instant oatmeal (thinned)
- Light yogurt (no fruit chunks)
- Lactose-free milk- Fat Free or 1%
- Plain soy milk (no vanilla/chocolate)
- Plain non-fat Greek yogurt
- Protein Shakes (150-180kcal, 20gm+ protein, <7gm sugar/svg). 1-2 svg/day are suggested
- Unsweetened applesauce
- Sugar-free pudding
- Vegetable juice (no pulp)
- Homemade low-sugar fruit smoothies (no store bought or Jamba Juice) made with applesauce, pureed pears, peaches, banana, yogurt or protein powder

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## **Pureed Diet – Week 3**

This diet stage allows your digestive system to get used to semi-solid foods. After the surgery, your stomach may be slightly swollen. If your food is not soft, it may cause discomfort and/or a blockage that can cause you to vomit. Most patients can comfortably tolerate 2-3oz (1/4-1/3 cup) portions at this time, due to the increase density of the food. Remember the following are guidelines, and it is recommended that you use good judgment and common sense when advancing your diet.

**Note: You may begin taking a chewable or liquid Calcium Citrate at Week 3**

### **Recommended Foods:**

- Low-fat refried beans
- Mashed potatoes/yams
- Low-fat cottage cheese
- Low-fat Ricotta cheese
- Hummus
- Smooth peanut/almond butter (1-2 Tbsp)
- Avocado (1-2 Tbsp)
- Lentil soup
- Mashed hard-boiled eggs (egg salad consistency mixed with low fat mayo, mustard, yogurt, or mashed avocado to moisten), poached, or soft-scrambled (minced)
- Tofu (soft or silken)
- Pureed vegetables
- Pureed soft fruit (no seeds)
- Bananas

## **Soft Diet – Week 4**

### **Recommended Foods:**

- Soft, tender skinless chicken, turkey or fish (chew well)
- Water-packed canned chicken/tuna (moistened same as egg salad, no raw veggies)
- Deli turkey or ham
- Water or juice packed canned or frozen fruits
- Canned or frozen vegetables

**Note: Caffeinated coffee and tea may be reintroduced, limiting caffeine intake from all sources to the recommended moderate range of 300-400mg per day. Continue to avoid high calorie flavorings/creamers.**

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## **Bariatric Solid Diet – Week 5**

### **Recommended Foods:**

- Low fat ground beef and deli roast beef
- Whole Beans: navy, soy, pinto, kidney, black
- Fresh fruits: (no peels) apple, pear, peach, nectarine
- String cheese / low-fat cheese (Baby Bell, Laughing Cow wedges)
- Soft cooked vegetables such as carrots, squash, zucchini, spinach, cauliflower. Avoid stalks of broccoli, asparagus, celery & limit white potatoes, green peas, and corn.
- Lettuce (romaine, baby spinach or spring blend, as tolerated with vinaigrette dressing)

**Note: You may use mild seasonings such as Italian, Taco, Creole, Thyme, Basil, Cumin, and Mrs. Dash.**

## **Introduce as Tolerated – 6 Weeks and Later**

### **Recommended Foods:**

- Crab, shrimp, lobster
- Lean pork or steak
- Seeds/nuts-almonds, peanuts, cashews (1-2 Tbsp.) chew well
- Quinoa (1-2 Tbsp. cooked)
- Regular milk (skim or low fat as tolerated)

## **Introduce After 8 – 12 Weeks:**

- Fresh fruits and raw vegetables with peels and seeds, as tolerated

## **Introduce After 3 Months:**

- Spices such as cayenne pepper, tabasco and hot sauce as tolerated

## Foods to Avoid for Three Months:

- Bread
- Pasta
- Rice
- Tortillas
- Waffles / Pancakes
- Muffins / Bagels
- Dry cereal
- Crackers
- Popcorn



**Note:** After three months, you may *gradually* reintroduce **whole grains** such as brown rice, whole wheat pasta, barley, and bulgur. Choose **WHOLE** grain breads (100% whole wheat) and limit to 2 servings/day

## General Guidelines for Portions

| Time frame from surgery | Suggested Portion size for meals   |
|-------------------------|--|
| First 3 months          | 1/3 cup  |
| Months 3-6              | 1/2 cup  |
| Months 6-9              | 3/4 cup  |
| Months 9-12             | 1 cup  |
| 12 months and beyond    | NO MORE THAN 1- 1.5 cups with 1-2 small high protein snacks (depending on protein goal and activity level) |

## Determining Accurate Portions

Initially it is recommended you measure your food in order to learn how to take care of your new stomach. Research shows that people often underestimate their portion sizes by as much as 25%, which can really add up. When you are more comfortable with portion control, you can use the following guide so that you can visually measure portions:

- 1/2c cooked or raw vegetables = a baseball
- 1oz or 2T avocado or peanut butter = a golf ball
- 1 T olive oil, salad dressing or mayonnaise = a poker chip
- 3oz chicken or meat = a deck of cards
- 3oz fish = a checkbook
- 1 slice of bread = an iPhone
- 1 baked or sweet potato = a computer mouse

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# Vitamin and Mineral Supplements

It is not necessary to start supplements the first week following your surgery. When you begin the Full Liquids (Week 2) diet stage, you may start your multi-vitamin and B12, followed by Calcium Citrate at Week 3. Be sure to follow the type and dosing listed below. Note that gummy vitamins are NOT recommended as they fall short of recommended micronutrients.

- A chewable multi-vitamin with minerals and iron supplement is mandatory after surgery to meet 200% of the Recommended Dietary Allowances. Options include standard Bariatric vitamins, or over the counter vitamins such as Flintstones Complete Chewable.
- Take 500 micrograms of Vitamin B12 daily (chewable, liquid or sublingual).
- Take 1200-1500 mg of Calcium Citrate daily (chewable or liquid). Take 500 mg 2-3 times per day. Note: This form of Calcium is generally available from vitamin stores, online sites or from the ALSA office.

**Note: Iron and calcium supplements should be taken at least 2 hours apart.**

**\*\*\*Patients having the Duodenal Switch and Distalization procedures have increased vitamin-mineral needs for calcium and fat soluble vitamins (A, D, E, K). Patients should review their individual vitamin-mineral regimen with their Surgeon and Registered Dietitian.**

It is recommended that you continue taking vitamin/mineral supplements for the rest of your life. If you are having problems with chewable vitamins, discuss making a change to a swallow variety with your doctor or dietitian.

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# General Rules After Surgery

1. For the first 3 months, most people feel comfortably full after eating 2-3oz (1/4 - 1/3 cup).
2. Introduce solid foods gradually. Try only one new food at a time.
3. **Avoid eating and drinking at the same time** as this may cause vomiting or stretch your stomach. It can also “wash” the foods through your stomach too quickly which will make you hungry again or cause the dumping syndrome. Stop drinking fluids before a meal, and resume drinking 30 minutes after a meal.
4. Do not skip meals. This may cause you to overeat at the next meal, which can stretch your stomach and cause discomfort or vomiting. It is important to eat 3 small meals, and possibly 1-2 protein snacks daily to ensure adequate nutrition.
5. Concentrate your diet on protein and healthy carbohydrates. Eat your protein foods first.
6. All patients, especially gastric bypass patients, **must avoid sugar, ice cream, milkshakes and all other food or drinks with added sugars.** Beverages should be **sugar-free and non-carbonated.** Select low-calorie beverages such as water, tea, Propel Zero®, or Crystal Light®.
7. Drink 6-8 cups (48-64 oz) of “non-protein” fluids per day to prevent dehydration.
8. Take your vitamin & mineral supplements daily. Attend all follow up appointments and review lab work annually to identify deficiencies.
9. Avoid using straws & chewing gum for the first 2-3 months to avoid discomfort/complications
10. Avoid alcohol and carbonated beverages. Bariatric patients may have an increased sensitivity, and alcohol is a source of empty calories. It is also a dehydrating beverage.

## Encouraged Eating Behaviors

- Take small bites of food and sip fluids slowly**
- Chew all foods thoroughly; take 20-30 minutes for each meal**
- Stop eating at the first sign of fullness**
- Do not eat and drink at the same time**
- Have regular meals; about every 4-5 waking hours**
- As your diet progresses, choose whole foods over protein bars/chips/supplements**
- Do not graze**
- Use small plates**
- Practice mindful eating- avoid talking and watching TV while eating**
- Avoid high calorie foods and beverages, which can limit weight loss.**
- Be careful of overcooked foods and leftovers (food can get dehydrated)**

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# Dining Out at Restaurants

- Eating out with family and friends is an important social experience and you should not be afraid of it. Use the following guidelines to help make dining out a relaxing and enjoyable experience.
- Think about what you will eat before you go out. Planning ahead will make you more likely to select appropriate foods. Select “safe” foods you know you can tolerate. Sometimes it is hard to tell what is in an item on a menu by its name. Do not be afraid to ask. It is wise to stick with foods you know when dining out.
- Order child-size portions if possible, however do not order from the child’s menu. You may have to give a simple explanation of your dietary needs. Our office can provide you with a card you can carry in your wallet stating you have had stomach surgery and cannot eat normal size meals. Most restaurants will honor this card.
- Ask to have dishes served without special sauces or dressings.
- Avoid fried foods. If it is fried, ask if it can be baked or steamed instead.
- Share a meal. Ask for a small plate and take small portions from your dining companion’s meal.
- Avoid alcohol as it contains a large amount of calories and the surgery itself significantly lowers your tolerance.

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# Avoiding Potential Problems

## Dehydration

Dehydration is very real and common concern following surgery early in the postoperative period, since you are not able to drink large amounts of water or other liquid at one time. This makes it hard to “catch up” if fluid intake is inadequate over a period of time.

Consuming less than the recommended **48-64oz/day** can lead to electrolyte abnormalities causing nausea, which then cause you to avoid fluids, leading to a dangerous cycle. It is important to track how much fluid you are consuming through the day and watch for signs of dehydration, such as thirst, dark urine, headache or dizziness.

## Nausea / Vomiting

Reports of nausea and/or vomiting may be related to food intolerance. It can also be related to eating behaviors, such as eating too fast or too much. Other causes of nausea may be due to lactose intolerance or intolerance to vitamin/mineral supplements. Be sure to discuss any intolerance at your follow up visits so your team can be alerted to possible causes/complications.

## Dumping Syndrome

A potential side effect with RYGB surgery, although some evidence suggests it can occur in SG patients as well. Dumping Syndrome is caused by stomach contents moving too rapidly through the small intestine. The body compensates by sending fluids from the bloodstream to dilute the food, causing a rapid decrease in the volume of circulating blood, and a rapid increase of fluid into the intestine. Symptoms include:

- Feeling faint
- Nausea
- Sweating
- Diarrhea
- Weakness
- Rumbling Stomach
- Rapid Pulse
- Anxiety

To prevent dumping syndrome, it is recommended to avoid consuming foods that are high in sugars or fats, eat more slowly, and wait to drink beverages until at least 30 minutes after meals.

## Hair Shedding

The rapid weight loss patients experience in the early months often causes stress to the body and results in a disruption of the growth cycle of hair. Hair shedding in the *first 3-6 months is normal*, and unrelated to nutrition status. It typically resolves after 6 months, but can last up to 12 months.

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## Diarrhea

Changes in bowel movements may be experienced by some patients in the early post-operative period. If you are having diarrhea, the following should be considered as possible causes:

- Lactose Intolerance- Remove lactose (the sugar portion of dairy foods) from your diet
- Sugar Alcohols- Remove sugar alcohols from the diet, such as mannitol, sorbitol and xylitol. These are often found in vitamin/mineral supplements, protein bars, sugar free candies and sugar free beverages.
- Dumping Syndrome- avoid rapidly absorbable carbohydrates; keep sugars below 10-15mg/svg and avoid eating and drinking at the same time

## Constipation

- Lack of Fiber- work toward 15-20gm fiber/day over a 2-3 week period after progressing to regular solids
- Caffeine- If you are still using decaffeinated coffees/teas, ease restriction
- Dehydration- Encourage frequent sipping of liquids throughout the day to ensure goal of 48-64oz fluids/day
- Lack of Physical Activity- increase exercise as tolerated

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# About Physical Activity

The health benefits of physical activity are numerous. They include weight management, blood glucose control, improved lipid profile, decreased blood pressure, decreased anxiety and an elevated sense of well-being. The most common question is, “how much physical activity is recommended?” The 2018 Physical Activity Guidelines provide recommendations to help answer this question. To meet basic guidelines, all individuals are encouraged to obtain:

- 150 Minutes of moderate intensity physical activity per week or vigorous intensity activity at least 75 minutes per week, and
- Strength training at least twice per week

## Here are (5) simple steps to get you started:

STEP 1 – Set aside time each day to exercise. Getting started can often be the most difficult part of any exercise routine. Scheduling exercise into your day and making it a priority will increase the chance of being successful. Teaming up with a physical activity (PA) buddy (your dog counts!), joining an exercise class, combining PA with a social event (such as dancing, a fund-raising walk) are simple ways to get started.

STEP 2 – Just Move! If you can't fit in a workout, take the stairs instead of the elevator, park further away, stand whenever you can, bicycle to run errands, or walk the dog. These small steps can add up to health benefits.

STEP 3 – Choose aerobic activities you enjoy. Walking is a great way to do moderate-intensity PA. Moderate level PA means working hard enough to raise your heart rate and cause you to breathe harder, yet still be able to carry on a conversation. Do other moderate- vigorous intensity exercise such as swimming, biking, or playing basketball with friends to get your daily PA. If you need a variety of activities to stay motivated, combine a few that appeal to you. PA can be accumulated through a variety of activities.

STEP 4 – Start with 10-15 minutes of aerobic exercise daily. Each week, add 5 minutes to your exercise routine until you reach 30 minutes of moderate-intensity for a minimum of 5 days per week. Or, you may do 25 minutes of vigorous-intensity exercise 3 days per week. The 30 minute recommendation is for the average healthy adult to maintain health and reduce the risk for chronic disease. To lose weight or maintain weight loss after bariatric surgery, 60-90 minutes of PA per day may be necessary.

STEP 5- Add strength training into your routine. Do 8-10 strength –training exercises, 8-12 repetitions of each exercise twice per week. You can use dumbbells, resistance bands or your own body weight. If you are unsure of how to do the exercises correctly, ask for a referral to an exercise professional.

**Remember, some activity is better than none! Even small increases in baseline activity can improve overall health.**

Note: These guidelines are reproduced from the Academy of Nutrition and Dietetics Physical Activity Toolkit; Appendix H