



PRE-OP DIET GUIDELINES

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PURPOSE

Understanding the reasoning behind the rules, makes it easier to follow them. There are several main reasons why you are required to follow pre-operative diet before having weight loss surgery.

Balance hormone system

Pre-op diet helps to control complicated hormone system responsible for causing obesity (hormones are more important than calories, one of such hormones is insulin). When we eat sugar, our pancreas produces one of the most important metabolism hormones – insulin that converts sugar into energy (or fat, when do not use all the produced energy). When we eat too much sugar regularly, insulin levels become elevated, which leads to insulin resistance. That in turn works just like a drug addiction: our body becomes less sensitive to the same amount of insulin; thus, pancreas produces more and more of it to achieve the needed effect; however, when we have more insulin in our blood than sugar, our body tells us to eat some sugar to even out the balance (this is what causes sugar cravings, hunger attacks). And as soon as we eat sugar, our body produces even more insulin increasing this addiction. The cycle goes on.

Similar process takes place in our brain: sugar triggers the release of dopamine hormone into the same area of the brain that responds to heroin and cocaine. Eating sugar regularly changes your brain so that it becomes tolerant to the sugar, causing you to require more to get the same effect. Sugar has also been shown to cause the release of endogenous opioids in the brain, which leads to a rush similar to that experienced when a person injects heroin. All of this leads to a vicious cycle of cravings and needing more sugar to feel good.

In the meantime, all the excess sugar is being stored as fat, slowing you're your metabolism, and promoting comorbidities such as heart disease, dementia, and cancer to name a few. This is a condition known as pre-diabetes. It is also called metabolic syndrome, insulin resistance, and syndrome X.

The key to weight loss, then, becomes focusing on foods that normalize blood sugar and lower insulin levels. If you eat the same number of calories from broccoli rather than cookies, you will lose weight.

If you eat food that spikes your insulin level, you will gain weight. If you eat food that reduces your insulin level, you will lose weight. This is true even if the food contains exactly the same number of calories or grams of protein, fat, carbohydrates and fiber.

FOR MORE INFORMATION TO GO:

- <https://crossroadstohealth.com/insulin-weight-gain-connection/>
(The insulin – Weight Gain Connection)
- <https://www.youtube.com/watch?v=bDWN5FLgbdI>
(Sugar Addiction Explained By Dr Robert H Lustig)
- <https://www.youtube.com/watch?v=XY1jtPqvoCk>
(Insulin or Calories: What's Behind Weight Loss?)
- <https://www.youtube.com/watch?v=tC3pACyRApg>
(Time to Act on Obesity)
- <https://www.youtube.com/watch?v=nxyxcTZccsE>
(Is a Calorie a Calorie? Processed Food, Experiment Gone Wrong)
- https://www.facebook.com/nutriciondeportivaonline/videos/334863366637788/?autoplay_reason=gatekeeper&video_container_type=0&video_creator_product_type=2&app_id=2392950137&live_video_guests=0
(Why Is a Calorie Not a Calorie (with Spanish subtitles))

Shrink enlarged fatty liver

Enlarged liver is a consequence of being overweight (also known as fatty liver disease). Following this diet causes the liver 'shrink' in size and softens it, making it easier to move during surgery.

During laparoscopic bariatric surgery, the liver has to be lifted out of the way to access the stomach lying beneath it. If the liver is heavy, fatty and immobile, it is harder for the surgeon to see and gain access to the stomach underneath. This could be a reason for the surgeon to make additional incisions or even cancel a surgery and allow a patient more time to follow the diet to shrink the liver, or changing to open surgery. Open surgery means a larger abdominal scar, which results in longer recovery and increased risks, and of course additional surgery costs.

To reduce the size of the liver, it is necessary to follow a diet that is low in carbohydrate, low in fat and moderate in protein.

Mental, emotional, and physical preparation for the post-operative stage

Consider the pre-op diet to be a training that helps your body and mind adjust to the new lifestyle that will follow the surgery. As part of this preparation you may be going through unpleasant sugar detox symptoms and caffeine withdrawal. Sugar and caffeine withdrawal happen when we change our diet not gradually but abruptly, thus consuming less stimulants (such as carbs and caffeinated beverages), which causes head-ache, general weakness, tiredness, mood changes, etc. You may choose to make diet changes gradually, slowly reducing amount of sugar and caffeine in your diet to avoid unpleasant withdrawal symptoms (if you choose this option, allow an extra week or two for your pre-op diet), or you may choose a cold turkey method (making all the changes abruptly). Regardless which option you choose, you want to allow your body and mind enough time to get prepared for the surgery in order to reduce post-operative tiredness and fatigue.

FOR MORE INFORMATION TO GO

- <https://www.healthline.com/health/sugar-detox-symptoms#the-addiction-cycle>
(Howto Beat Sugar Detox Symptoms and Feel Better Than Ever)
- <https://www.healthline.com/nutrition/caffeine-withdrawal-symptoms#section9>
(8 Symptoms of Caffeine Withdrawal)

Losing weight

Dr. Edwin Guerrero may have certain weight loss requirements for patients with BMI over 50 that will need to be met before surgery. For low and medium BMI patients (with BMI between 30 and 50) there is no specific number of pounds you need to lose during the pre-op diet, rather concentrate on acquiring healthy eating habits and complete the goals mentioned above.

For RNY or Mini Gastric Bypass patients with high BMI it is very important to burn as much internal (visceral) fat as possible (the unhealthiest fat that surrounds our internal organs). The surgeon will need to pull small intestine in order to perform a bypass, and in order to do that he will need to separate it from the surrounding fat. All visceral fat has a lot of blood vessels that will need to be cut, thus increasing blood loss during surgery, and scar tissue during healing process. In certain cases, for patients with BMI over 60 Dr. Edwin Guerrero will recommend to proceed with a gastric sleeve or SADIS, or will make such decision during surgery, if performing a bypass becomes too risky due to the amount of internal fat. This will be discussed with high BMI patients prior to surgery of course.

Special note for patients with diabetes

If you have diabetes and are treated with medication, you will need to

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adjust your insulin or medication while following this diet. Please contact your Diabetes Specialist Nurse/Practice Nurse/GP before starting the diet.

Important rules

- **Understand satiety.** Eat frequently (5-6 times a day) but do not overeat: stop once you feel full! Do not try to always finish everything on your plate. Our stomach and guts send a signal (through the satiety hormones) to our brain that we are full about 15-20 minutes after we start eating, once our body starts responding to glucose from food with elevated insulin levels in our blood. If you eat slowly, your brain will receive those signals before you finish your meal, thus allowing you to not overeat.
- **Hunger vs. Thirst.** Have a glass of water when you think you feel hungry. The feelings of thirst and hunger are very similar (the same part of your brain is responsible for interpreting hunger and thirst signals, which can result in mixed signals). If you have a glass of water and still feel hungry, then you are really hungry. Otherwise the feeling will go away.
- **Practice thorough chewing.** Do not “inhale” food. Put your fork down between the bites. Enjoy chewing and tasting food in your mouth, pay attention to what you are eating and do not get distracted by TV or cell phone. Focus on your meal. These habits will be essential during the post-op stage.
- **Do not skip meals.** Skipping a meal means you will be so hungry at the next meal that you are likely to overeat. Besides skipping meals can lead to a slowdown of your metabolism, meaning you'll burn fewer calories.
- **When you blow your diet, do not give up.** Do not wait until next day, or Monday or next month to go back to the right course. Resume your healthy diet with the very next meal. Every meal matters, if you had a piece of cake at a family gathering for lunch,

get back on track at dinner.

- **All calories are not the same.** Do not be obsessed with counting calories, because 100 calories coming from soda or chips are not the same as 100 calories coming from broccoli or almonds. Focus on healthy food choices and portion control (as will be explained further). What we eat is more important than how much we eat.
- **No drinking while eating.** Stop drinking 30 minutes before you eat and do not drink again until 30 minutes after you eat. This will be a requirement following your surgical procedure and needs to become a lifetime habit. Think about your stomach as a colander (strainer), or a funnel. If you only put liquid in the colander/funnel it's going to go straight through, but if you only put solid/soft food in that colander, it will drain through slowly. If you end up mixing water with the food, it thins it, allowing the food to go through the colander/funnel faster (or your stomach faster). By doing this, you won't feel as full, allowing you to eat more during your meals and you'll become hungry sooner, which all equates to consuming more food and more calories throughout the day. And after surgery you will want to fill up your limited stomach space with protein and nutritious food first, and drink later, thus, developing this habit now will become very useful in the future.
- **Drink at least 2 L (or 64 oz.) of water a day.** If you drink a lot of water you might lack potassium, which might cause leg or toes cramps (especially after work outs). To maintain proper levels of potassium, take Potassium Chloride 500mg a day in pills (if needed), or add foods rich in potassium to your diet (example: spinach, tomatoes, broccoli, Brussel sprouts, champignon mushrooms, pickles or pickle juice, avocados, and apricots. Also, certain proteins like salmon, turkey, beef, and yogurt are rich in potassium).
- **Avoid artificial sweeteners.** It goes without saying that added sugar is to be avoided, however artificial sweeteners should also be avoided as much as possible. Extreme and unnatural sweetness encourages sugar cravings and sugar dependence. Non-nutritive

sweeteners are far more potent than table sugar and high-fructose corn syrup. A miniscule amount produces a sweet taste comparable to that of sugar, without comparable calories. Overstimulation of sugar receptors from frequent use of these hyper-intense sweeteners may limit tolerance for more complex tastes. That means people who routinely use artificial sweeteners may start to find less intensely sweet foods, such as fruit, less appealing and unsweet foods, such as vegetables, downright unpalatable. Also keep in mind that artificial sweeteners (especially when used after surgery) often cause stomachache, diarrhea, and gas.

- **Cook your own food.** Avoid all types of fast food, even if seems to be a healthy salad or other type of healthy food, they often contain added sugar (especially premade salad dressings), taste enhancing chemicals and trans fats. Clean up your refrigerator and pantry, remove all bad foods to avoid unnecessary temptation. Think ahead what you are going to have for breakfast, lunch, and dinner and shop and cook accordingly. If possible, always bring your own lunch box to work with healthy foods. Use your own thermos with hot coffee or tea to avoid temptation to buy a beverage loaded with sugar and cream.

FOR MORE INFORMATION

- https://www.huffingtonpost.com.au/2016/11/09/we-found-out-if-it-really-takes-20-minutes-to-feel-full_a_21602736/
(We Found Out if It Really Takes 20 Minutes to Feel Full)
- <https://www.seattletimes.com/life/wellness/hunger-vs-thirst-are-you-eating-when-you-should-be-drinking/>
(Hunger vs. Thirst: Are You Eating When You Should be Drinking?)
- <https://www.healthline.com/nutrition/artificial-sweeteners-and-weight-gain#metabolic-health>
(Can “Diet” Make You Fat? The Truth About Artificial Sweeteners)
- <https://www.health.harvard.edu/blog/artificial-sweeteners-sugar-free-but-at-what-cost-201207165030>

(Artificial sweeteners: sugar-free, but at what cost?)

- <https://www.youtube.com/watch?v=xR0VM3mnsgM&fbclid=IwAR2nS3w73QLihq2P8aewZCEBoIIcHcY0I8kJlc61Zh91KoJkhwiOxaa1pnl&app=desktop>
(WLS - No Drinking With Meals!)

Duration

Ideally everyone should start making diet changes described in these instructions the moment they decide to have surgery. You will learn for how long precisely you should strictly follow the diet during your consultation with Dr. Edwin Guerrero. However, our minimum recommendations are:

- BMI 30 to 32 (very low BMI for bariatric patients) – 1 week
- BMI 33 to 50 – 2 weeks
- BMI 50 to 60 – 4 weeks
- BMI 60 to 70 – 6 weeks
- BMI 70 and higher – 8 weeks

BMI 61 and over requires at least 6 weeks on a pre-op diet and pre-op consultation with Dr. Edwin Guerrero. Please do not ignore follow up consultations, and do not feel as if we were checking on you. We sincerely want you to succeed and would like to guide you through this process every step of the way, help you adhere to the diet and benefit from it to be ready for surgery rather sooner than later.

RECOMMENDED FOODS

Your diet should include:

- **3 main meals per day** (reduced size, images below show how to easily measure your meals using the rule of palm)
- **2 or 3 small snacks** (depending on when you go to sleep, you may add a third snack in the evening if you go to bed late, otherwise limit yourself to 2 small snacks a day)

Important:

Every meal or snack should include protein (it will help you feel full longer as it takes longer to digest and does not cause insulin level spikes).

Main meal = Protein + Vegetables or Greens

Snack = Protein + Low-sugar Fruit

- You may combine several types of protein or vegetables/greens in one meal, or several types of fruit or protein in one snack as long as you follow the recommended portion size.
- Give preference to cooking with healthy oils and little salt (only extra virgin olive oil, organic coconut oil, walnut oil, and avocado oil).

	ALLOWED	AVOID
PROTEIN (Choose an option and combine with veggies or greens) *Foods with higher glycemic index (cause insulin level spikes) – eat in moderation	Egg (1 yolk and 2 egg whites per meal) Fish (tuna, salmon, swordfish, tilapia, sardines) Crab Lobster Shrimp Chicken without the skin Turkey without the skin Lean pork Lean Beef (ground, steak) Low- fat cheese (cottage, ricotta, mozzarella, cream cheese, feta)	Bacon Sausages Chicken, turkey or pork skin Deep fried foods Yogurt with added sugar Whole milk

	Low-fat yogurt, preferably Greek type Tofu Beans* Lentils* Chickpeas*	
VEGETABLES / GREENS *Foods with higher glycemic index (cause insulin level spikes) – eat in moderation	Dark leafy greens (all types such as spinach, kale, lettuce, arugula, purslane, bok choy, etc.) Onions Peas Mushrooms Asparagus Artichokes Peppers (all types) Cauliflower Broccoli Jicama Celery Eggplant Cabbage Brussels <u>spouts</u> <u>Green</u> beans Garlic Fennel Radish Cucumber Pickles Zucchini Summer squash Pumpkin Sweet potato * Root vegetables such as carrots, beets, yucca and parsnips * Winter squash such as acorn* Tomatoes	Potatoes (including chips, French fries)) Corn (including corn chips, popcorn)
CARBS / FRUITS *Foods with higher glycemic index (cause insulin level spikes) – eat in moderation	Berries fresh (blueberries, acai, strawberries, blackberries) (1 cup) Apple Pear Cherries (1 cup) Peach Apricot Plums Pineapple (1 cup) Papaya* (1 cup) Orange* Lemon Limes Kiwi*	Dried fruits such as raisins and prunes Fruit juice Mango Grapes Banana Bread (all types, crackers, pretzels) Rice (all types, rice cakes) Pasta Tortillas (also nachos) Pizza Foods cooked with

	Melon* (1 cup) Watermelon* (1 cup) Avocado (1/4 piece per day)	flour/breadcrumbs (white or whole grain)
NUTS/SEEDS (protein + fat) Choose one option plus a portion of fruit for a snack	Almonds (15 pieces) Walnuts (10) Pecans (10) Brazil nuts (3) Pine nuts (75) Hazelnuts (10) Peanuts (17) Chia seeds (2 table spoons) Sesame seeds (2 table spoons) Macadamia nuts (5) Flaxseed (2 table spoons) Pumpkin seeds (2 table spoons) Edamame (1/2 cup) Unsweetened nut butter (2 table spoons)	Corn nuts Honey roasted nuts Nuts with a sweet or candy coating Sweetened nut butter Granola
OPTIONS FOR PROTEIN- RICH SNACKS	<ul style="list-style-type: none"> • 1 oz reduced-fat cheese and ½ cup, or a handful, of fruit • 2 oz light fruit yogurt mixed with ¼ cup cottage cheese • 2 table spoons of hummus with raw vegetables (handful) • 1/3 cup cottage cheese and ½ cup fruit • 1/3 cup cottage cheese mixed with sugar free Jell-O • 1 oz reduced-fat cheese and 1 oz lean deli meat wrapped in lettuce leaf • 1 oz reduced-fat cheese and 7 olives • 2 oz of Greek yogurt and a cup of strawberries 	Potato chips Pretzels Corn chips Popcorn Candy Chocolate Cookies Rice cakes Crackers Granola bars Ice cream
CONDIMENTS	Spices (Mrs. Dash, hot sauce, cinnamon, garlic) Herbs (dill, cilantro, rosemary, parsley) Extracts (vanilla, lemon, almond, hazelnut) Reduced sodium Worcestershire sauce Low-sodium soy sauce Vinegars (all varieties) Capers, horseradish, salsa Olive or avocado oil (extra virgin) in moderation Mustard (except sweet mustards) No sugar added pickles and relish Low fat mayonnaise (1 table spoon)	Honey mustard Ketchup Salad dressings (<u>premade</u> , contain sugar)
SWEETENERS	Stevia (100% organic and without added artificial sweeteners such as sucralose, aspartame or acesulfame)	Refined sugar (white and brown) Corn syrup Honey Maple syrup Agave nectar

		Artificial sweeteners such as aspartame, acesulfame and sucralose (avoid as much as possible) Sugar alcohol (such as erythritol, xylitol, sorbitol, etc.)
FLUIDS	Water Tea (preferably herbal or fruit tea) Coffee regular or decaf (must be stopped at least 2 to 4 weeks before surgery) Almond milk unsweetened (not more than 60 calories per serving) Fruit infused water Other sugar-free drinks (ideally without artificial sweeteners)	Juices (all types, fruit and vegetable) Regular milk Drinks with artificial sweeteners or caffeine (energy drinks) Soda Alcohol Smoothies

RECOMMENDED PORTION SIZES

Rule of palm

Use the rule of palm to measure your food portions easily without any scales, cups, grams, ounces, etc. No need to count calories either, simply follow this rule.

Your **palm** determines your **protein** portions.

Your **fist** determines your **veggie** portions.

Your **cupped hand** determines your **carb/fruit** portions.

Your **thumb** determines your **fat (nuts/seeds/cheese)** portions.

For **protein-dense foods** like meat, fish, eggs, dairy, or beans, use a **palm** sized serving.

Note: a palm-sized portion is the same thickness and diameter as your palm.

1 palm-sized portion is recommended with each main meal.



For **veggies** like broccoli, spinach, salad, carrots, etc. use a **fist**-sized serving. Again, a fist-sized portion is the same thickness and diameter as your fist. 1 palm-sized portion is recommended with each main meal.



For **carbohydrate-dense foods** – fruits – use a **cupped hand** to determine your serving size. 1 cupped-hand sized portion of carbohydrates with most snacks.



For **fat-dense foods** – like cheese, nut butters, nuts/seeds – use your **entire thumb** to determine your serving size. We recommend 1 thumb-sized portion of fats or protein foods high in fat with most snacks.



Meal plan (Sample)

Breakfast

Option 1: Omelet (1 whole egg + 1 egg white, handful of spinach, table spoon of chopped onions, olive oil, salt and pepper in moderation)

Option 2: Scrambled eggs (1 whole egg + 1 egg white, any fresh mushrooms 4-6 pieces, table spoon of chopped onions, olive oil, salt and pepper in moderation)

Snack

Option 1: Small Greek yogurt (sugar-free) with 1 handful of fresh blueberries

Option 2: Lettuce wrap with two thin slices of turkey breast

Lunch

Option 1: Mixed greens salad (olive oil, salt, pepper, lemon juice for dressing), grilled chicken breast (1/2 of breast or equal to palm size)

Option 2: Tomato and cucumber salad with shrimps, chickpeas or green peas

Snack

Option 1: 10-15 almonds, 1/2 large apple (or 1 small apple)

Option 2: Two small pieces of cheese, any fruit/fresh berries (1 handful)

Dinner

Option 1: Sautéed broccoli (use onions and garlic, lemon juice, salt and pepper, other spices to add flavor), fried/baked/grilled tilapia (1/2 filet or portion equal to palm size)

Option 2: Grilled beef steak (choose lean meat, palm size portion, no heavy sauce), a handful of drilled asparagus

Snack (if necessary)

Option 1: A slice of cheese (finger size portion) with 1 mandarin

Option 2: Two table spoons of hummus with 1 celery stick and 4-5 baby carrots

Drink lots of water, herbal/fruit tea, fruit infused water between the meals (but not with meals).

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Pre-op Instructions

Any type of surgery is a serious procedure that carries certain risks, and a proper preparation is essential for the successful outcome.

Stage “1 month before”

- Stop all pregnancy preventive oral medications and hormonal medications at least 3 or 4 weeks before surgery as they increase blood clot risks.
- Stop smoking or vaping (if not possible to stop entirely, reduce the number of cigarettes to 1 or 2 a day). Remember that smoking slows down healing time by narrowing blood vessels, restricting blood flow to the surgical site, potentially it could cause tissue necrosis and stomach leak; not to mention possible cardiovascular issues, anesthesia complications, infections, etc.; smoking after surgery can cause gastritis and ulcers in the stomach pouch.
- Stop consuming alcohol
- Stop all beverages with caffeine, that includes energy drinks (you may switch to decaf for a week or two for easier transition to no-coffee-at-all. All types of coffee must be stopped at least two weeks prior to surgery).
- Discuss with your physician a routine exercise program suitable for your health condition. Patients with cardio-vascular or joint diseases are not required to exercise. Otherwise start walking or doing elliptical for 30 minutes daily, and if possible, consider swimming – the best option that is completely safe for your joints and muscles. You will resume exercising 1 month after surgery.

Stage “14 days before”

Regardless whether you have acid reflux/heartburn or not, start taking Omeprazole (antacid medication) 1 pill of 20mg twice a day (every 12 hours, total dosage 40 mg per day) for two weeks prior to the surgery (the last pill to be taken the evening before surgery) in order to decrease stomach acidity and

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later acid reflux, nausea, inflammation, and swelling caused by the procedure. Continue taking antacid medication after surgery for at least two months or until acid reflux/heartburn is gone. Tip: you can purchase a 2-month supply of anti-acid medicine over the counter in Mexico for under \$10 USD.

In case you are already taking anti-acids, continue as prescribed by your doctor. If your regular dosage is 40 mg once a day, you may continue. If your regular dosage is 20 mg once a day, increase it to 20 mg twice a day. If you normally use other brands of anti-acids: Omeprazole (Prilosec), Pantoprazole (Pantozol), Esomeprazole (Nexium)), you can continue your prescribed anti-acid.

Stage “7 days before” Important!

Consult with Dr. Edwin Guerrero about medications you are taking and when they need to be stopped (usually it is discussed during pre-op consultation).

Stop all NSAIDs 7 days prior to surgery (Aspirin, baby low-dose Aspirin, Advil, Aleve, Ibuprofen, Nuprin, or any other non-steroidal anti-inflammatory medication, this includes most arthritis medications). If you are not sure, please check with your physician. For headache or minor pains, you may use Tylenol (including the day of surgery). You may restart some of these medications 7 days after surgery (some medications may be resumed sooner), however consult with your doctor regarding NSAIDS (for example only if you have heart issues you may resume taking Aspirin or other blood thinners 7 days post-op but always after you take an antacid pill (Omeprazole) to protect your stomach, which should be taken daily for at least 2 months after surgery; we highly recommend changing pain medication like Ibuprofen to Tylenol, or Celebrex, or Meloxicam, as Ibuprofen may cause gastritis and ulcers; Ibuprofen and other NSAIDs after WLS can be taken only if absolutely necessary, and always with an antacid pill first to protect your stomach. Ideally you should use Tylenol only. Please always consult with your doctor before you resume certain medication after surgery.

You may stop taking all vitamins when you begin the liquid diet stage, as taking vitamins on an empty stomach or without solid foods may cause nausea.

Stage “3 days before” Full Liquid Stage

During the last 3 days before surgery (not including the day of surgery, if surgery is on Monday, the 3 days before include Fri, Sat, Sun) it is required that you follow full-liquid diet. This “liquid stage” can be increased to 5, 7 or more days by Dr. Edwin Guerrero depending on your BMI and duration of the solid food diet stage. Dr. Edwin Guerrero will let you know if you are required to increase the “liquid stage” during your pre-op consultation.

Your liquid meals can include the following options:

- Plain Greek yogurt (or regular sugar-free yogurt), you may use natural liquid Stevia sweetener
- Protein shakes with low (3g) or “0” carbs and low or “0” fat (good protein shake should include not more than 3g of sugar and not less than 20g of protein)
- Low fat milk or almond milk
- Broth (chicken/beef/fish/vegetable broth, or liquid part of any other type of soup)
- Egg-drop soup (strained)
- Carrot, zucchini or squash cream soups (well-blended so there are no solid pieces, strained, add enough water to make it thin, NO cream to be added)
- Sugar-free pudding/Jell-O/popsicles
- Fruit-infused water, especially with electrolytes, and plenty of water or herbal/fruit tea without sugar, coconut water and other sugar-free fluids are recommended.

We do not recommend chewing gum before or after surgery as it stimulates stomach acid production and could cause worse acid reflux after surgery as well as make us feel more hungry.

The purpose of the full liquid diet stage is to cleanse your stomach pouch and bowel from any kinds of solids; to reduce the amount of stomach acid produced, thus decreasing chances of having heart burn issue after surgery; giving your stomach a rest which helps to decrease stomach pouch swelling during the first days of recovery; shrink your liver.

Stage “The Big Day”

- Stop drinking at midnight the night before surgery if your surgery is in the morning, or 8 hours before surgery if your surgery is in the afternoon (in such case the only fluid allowed early in the morning on the day of surgery is water (as other fluids may affect your blood work that will be performed at the hospital on the day of surgery). It is very important that you drink lots and lots of fluids during the 3-day liquid diet in order to be well hydrated for the day of your surgery.
- You may take medication for diabetes, high blood pressure, anxiety or antidepressant as indicated by your physician early in the morning with a small glass of water.
- You may brush your teeth normally.
- Take a shower with soap the night before surgery or in the morning.
- There is no need to do bowel cleansing neither before gastric sleeve nor bypass surgery, as the liquid diet stage will cleanse your bowel sufficiently.
- Take off all jewelry and contact lenses. If you cannot take your ring off, or piercing, anesthesiologist will wrap a piece of tape around it to protect your skin from burns. However, in rare cases jewelry may interfere with the electrocautery machine used during anesthesia, and may need to be cut off.

- You may have acrylic/gel/polished nails but short (5-6 mm or 1/4 of an inch), as you will have an oximeter attached to your index finger. If your nails are too long, the oximeter will fall off and nurses will have to shorten your index finger nail.

Vitamins

(for gastric sleeve and gastric bypass patients, pre and post-op)

Individuals who undergo gastric sleeve or bypass surgery have reduced ability to absorb vitamins and electrolytes which places them at higher risk of developing nutritional and vitamin deficiencies (especially gastric bypass patients). These deficiencies include, but are not limited to, vitamin A, B, C, D, E, K, folate, calcium, iron, zinc and magnesium.

It is recommended that you BEGIN TAKING VITAMINS AS SOON AS YOU START THE PRE-OP DIET and get into a habit of taking them daily FOR THE REST OF YOUR LIFE.

Stop taking vitamins 3 days before surgery, when you start your liquid diet stage, since taking vitamins on an empty stomach or without solid food may cause nausea.

Resume taking vitamins after surgery as soon as you are able to tolerate pills (it is fine to wait 1 or even 2 weeks before you resume vitamins after surgery to allow your stomach to heal, or you may use liquid vitamin forms or a pill crusher).

You will need to purchase the following vitamins:

- Multivitamins (ideally with Iron and B12)
- Iron (if not included in the multivitamins)
- B-Complex (with B1)
- Calcium Citrate with D3
- Magnesium Citrate (is often combined with Calcium Citrate and D3)
- Omega 3
- Probiotics

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Note! It is not required to purchase specifically bariatric vitamins (Calcium Citrate, Vitamin B Complex and Probiotics do not need to be a bariatric brand; though they are often better tasting and are higher quality products). You can choose any brand as long as you reach the recommended doses of each vitamin. Keep in mind that standard over the counter (OTC) vitamin brands are formulated to meet the nutritional needs of the general population. As a bariatric patient, your body requires a much higher level of 13 micronutrients that OTC brands will not meet; this is why we recommend using bariatric formulated brands when available.

Below you will find recommendations for each vitamin, brand and dosage.

NO GUMMIE VITAMINS OF ANY KIND AFTER SURGERY!

MULTIVITAMINS

Dosage:

Bariatric formulated Multivitamin with iron & Vitamin B12: 1 serving daily (each brand has different serving sizes, read the label carefully, one serving may require 1, 2, or 3 pills or capsules per day.)

Non-bariatric multivitamins: 2 serving sizes daily (200 % Recommended Daily Allowance (RDA))

We recommend capsule presentation, as chewable tablets are often reported by our patients as unpalatable.

Brand	Name	Serving size	Vitamin B12 (mcg)	Iron (mg)	Vitamin D3 (IU)	Average cost/month
ProCare Health	Bariatric Multi-Vitamin with 45 mg Iron	1 chewable tablet	1000	45	3000	15
ProCare Health	Bariatric Multi-Vitamin with 45 mg Iron	1 capsule	1000	45	3000	15
ProCare Health	Bariatric Multi-Vitamin with 18 mg Iron	1 capsule	1000	18	3000	20
Bariatric Advantage	Advanced EA Multivitamin	2 chewable tablets	1000	45	3000	30
Bariatric Advantage	Ultra-Multivitamin with Iron	3 capsules	1000	45	3000	17
Celebrate	Multi-Complete 36	2 chewable or 3 capsules	1000	36	3000	20
Celebrate	Multi-Complete 45	2 chewable or 3 capsules	1000	45	3000	23
Celebrate	Multi-Complete 60	2 chewable or 3 capsules	500	60	3000	24
Opurity	Bypass & Sleeve Optimized – Chewable	1 chewable tablet	500	18	3000	10
Opurity	Complete Optimized Multivitamin-multimineral	2 capsules	500	18	3000	10

Important! If you choose a non-bariatric formulated multivitamin, be sure to either choose multivitamin complex that includes iron, or take iron separately.

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Iron (100 % RDA) use one the following types:

- Ferrous Sulfate 325 mg/day (some brands may say 65 mg of elemental iron, it is equivalent to 325 mg of ferrous sulfate)
- Ferrous Gluconate 325 mg / day
- Elemental Iron 18-27 mg /day

Note! Always allow at least 2 hours between Calcium Citrate and Iron (or multivitamins that include iron) for better absorption.

If ferrous sulfate has unacceptable side effects (nausea or stomach pain), ferrous gluconate is a possible alternative for patients who cannot tolerate ferrous sulfate. Be aware that iron intake will cause dark stools, it is normal.

Vitamin B Complex

Brand	Name	Serving size	B1 (Thiamin) (mg)	Average cost/month
Kirkland	Super B-Complex with Electrolytes	1 tablet	100	2
Celebrate	Vitamin B-50 Complex	1 capsule	50	4
Now	Vitamin B-100	1 capsule	100	4
Source Naturals	Vitamin B-50 Complex	1 tablet	50	4
Twin Lab	Stress B-Complex Capsules with Vitamin C	2 capsules	50	5
Bariatric Advantage	Vitamin B-50 Complex	2 capsules	50	7

Note! All bariatric formulated multivitamins include the recommended dosage of vitamin B12. If your non-bariatric multivitamin brand does not include B12 or the dosage is low, be sure to take it separately as B12 or part of B-Complex. See the recommended daily dosage below:

Vitamin B12 (Cobalamin) use one of the options:

- * 500 – 1000 mcg per day (ideally sublingual dissolvable pills or liquid form)
- * 1000 mcg twice a month by injection (only if necessary)

Your lab values will be high when taking this amount of B vitamins. We expect this high lab value; taking the B complex helps prevent a deficiency. We will adjust your intake based on your post-op lab work that is recommended 3, 6, 12, and 24 months post-op.

B-vitamins can be taken on an empty stomach, all others should be taken with a meal.

Calcium Citrate with D3

Dosage:

Calcium Citrate 1500-2000 mg/day – Vitamin D3 800-2000 UI /day

Divide this into 2-3 servings per day to reach the daily recommended dosage and for better absorption.

Choose a brand that contains Calcium Citrate and vitamin D3. Avoid Calcium Carbonate or Calcium Caltrate.

Remember: separate the multivitamin with iron from calcium citrate by 2+ hours for maximum absorption.

Brand	Name	Serving size	Spacing	Calcium citrate (mg)	Vitamin D (IU)	Average cost/month
Pro Care Health	UpCal D Powdered Calcium Citrate	1 scoop or packet	1 scoop or packet, 3x/day	500	500	18
Kirkland	Calcium citrate with Vit D	2 tablets	2 tablets, 3x/day	500	800	9
Celebrate	Calcium Plus 500	1 chewable tablet	1 tablet, 3x/day	500	333	22
Bariatric Advantage	Calcium Citrate Chewy Bites	1 chewy bite	1 chewy bite, 3x/day	500	500	30
Blue Bonnet	Liquid Calcium Magnesium Citrate + Vitamin D3	1 Tbsp.	1 Tbsp., 2x/day	600	400	25
Citracal	Maximum Plus Calcium Citrate + D3	2 caplets	2 caplets, 2x/day	630	500	18
Nutrition	Calcium Citrate w with D3	2 tablets	2 tablets 2x/day	700	400	7
Opurity	Calcium-Citrate Plus-Chewable	4 tablets	2 tablets 2x/day	1200	800	14

If possible, give preference to Calcium brand that contains Magnesium, otherwise take Magnesium separately.

Magnesium Citrate Dosage: 400 – 500 mg per day

We recommend that you start taking Omega 3 (fish oil) during your pre-op diet and resume as soon as you can tolerate it after surgery, preferably 2- or 3-months post-op. Give preference to brands that source fish oil from non-farmed wild species. If you are allergic to fish, use capsules with flaxseed oil, also a great source of Omega 3.

Omega-3 Dosage: 2000 mg per day (with meal).

Probiotics

After weight loss surgery, the balance between “good” and “bad” bacteria may become altered. This is due to disruption of your GI tract, as well as the use of antibiotics after surgery to help prevent infection. While antibiotics can help keep harmful bacteria under control, they can also wipe out the good bacteria in your body. The number and type of intestinal bacteria is regulated by both intestinal motility and gastric acid secretion, which are both altered with the weight loss surgery (WLS). Probiotics will also help vitamin B12 absorption and will help decrease intestinal inflammation and other types of discomfort that often follow WLS.

Brand	Name	Serving Size	Average cost/month
Align Probiotic (Bifidobacterium)	B. Infantis 35624	1 Capsule	22
Culturelle (Lactobacillus)	Digestive Health	1 Capsule	17
Bariatric Advantage	Chewable Floravantage Probiotic	2 chewable tablets	29
Celebrate	Balance Probiotic	1 capsule	28
Garden of Life (16 different strains)	Primal Defense ULTRA Ultimate Probiotic Formula	1 capsule	10
Klaire Labs	Ther-Biotic complete	1 capsule	21
Mega Foods	Mega Flora	1 capsule	15
Nature Made	Digestive Probiotics Advanced	2 capsules	21
Nutrition Now PB8	Immune support probiotic	1 capsule	9

There are many over the counter probiotics available, most of them contain only one strain of bacteria. Probiotics with at least 5 billion colony forming units (CFUs) per dose that contain at least seven strains of probiotics appear to be the most effective. Probiotics are most effective when taken with meals (unless the label states otherwise). Probiotics come in many forms, including pills, powders, liquids, capsules, and chewable tablets.

Vitamin Schedule for Pre- and Post-op (Sample)

Time	Example 1 First 2 months post op	Example 2 2 - 3+ months post op	Example 3 <i>If extra iron is needed</i>
7:00 am (breakfast)	Calcium citrate w/Vit D3 (1 chewy bite - 500 mg) Magnesium Citrate (500 mg)	Bariatric Multivitamin (1 capsule) B-complex (1 capsule) Probiotic (1 capsule)	Calcium citrate w/Vit D3 (1 chewy bite - 500 mg) Magnesium Citrate (500 mg)
10:00 am	Bariatric Multivitamin (2 chewable tablets)		Bariatric Multivitamin (1 capsule) B-complex (1 capsule) Probiotic (1 capsule)
12:00 pm (lunch)	Calcium citrate w/Vit D3 (1 chewy bite - 500 mg) B-complex (1 capsule) Probiotic (2 chewable tablets)	Calcium citrate w/Vit D3 (2 caplets - 630 mg) Omega 3 (1 capsule) Magnesium Citrate (500 mg)	Calcium citrate w/Vit D3 (1 chewy bite - 500 mg)
3:00 pm			Iron with Vitamin C (1 capsule) *
6:00 pm (dinner)	Calcium citrate w/Vit D3* (1 chewy bite - 500 mg)	Calcium citrate w/Vit D3 (2 caplets - 630 mg) Omega 3 (1 capsule)	Calcium citrate w/Vit D3 (1 chewy bite - 500 mg)

*3rd Calcium intake is recommended for bypass patients only or women after menopause after either gastric sleeve or bypass.

*Extra iron (additionally to multivitamins with iron) only if needed after having lab work done to confirm iron deficiency.

Note! You may take vitamins throughout the day at your convenience (make your own schedule), as long as you do not take Calcium and iron (or multivitamins that contain iron) at the same time.