

Sleeve Gastrectomy

General information

The sleeve gastrectomy is a restrictive weight loss surgical procedure that involves forming a sleeve about the size of a banana by stapling off and removing the remaining portion of the stomach (as much as eighty percent of the stomach) leaving a pouch with a capacity of two (2) to four (4) ounces. Sleeve gastrectomy limits the amount of food that can be eaten at one time by permanently decreasing the size of the stomach.

Advantages of the gastric sleeve:

- Clinical studies have shown that patients achieved an average of 70-80% excess weight loss
- Improvement in type 2 diabetes, high cholesterol, high blood pressure, and obstructive sleep apnea
- Possibly safer for the long term than gastric bypass surgery
- Less food gets stuck because there is no restrictive band
- Limits the amount of food that can be eaten at one time
- May reduce hunger and cravings for sweets
- Food passes through the digestive tract in the usual way
- No postoperative adjustments needed

Disadvantages/risks of the gastric sleeve:

- Relatively new procedure so there is still a lot unknown about the long term outcomes
- Possible perforation of the stomach as a longer term repercussion
- Procedure cannot be reversed
- The stomach remnant is very small and it is not known how much it still works to digest food
- May be at a higher risk for a herniated stomach, distention of the esophagus, and ulcers
- Vitamin deficiencies, electrolytes, and anemia may occur. Vitamins are recommended after surgery
- Complications such as leaks, bleeding, or infection can occur
- Remnant of stomach may stretch
- Inability to eat certain foods after surgery
- Restriction is not adjustable, revision involves another surgery
- Weight loss/maintenance depends on healthy diet and exercise and requires long term follow up to be successful
- Higher than normal risk for developing gallstones and gallbladder disease than with other weight loss surgery
- Smoking will make any weight loss surgery repercussions much worse



Sleeve Gastrectomy

Preoperative Diet

Congratulations! You are one step closer to having your weight loss surgery. A low fat, low carb, low calorie, high protein diet is recommended for patients before gastric banding or gastric sleeve.

Advantages

- Decreases the size of the liver
- Decreases complications after surgery
- Improves recovery time
- Improves diet compliance after surgery
- Initiates early weight loss

Liquid Diet

For a patient with a BMI above 50, follow the full liquid diet for five days prior to surgery, and then clear liquids for two days, for a total of 7 days.

For a patient with a BMI of 40-50, follow the full liquid diet for three days prior to surgery, and then clear liquids for two days, for a total of 5 days.

For a patient with a BMI below 40, only two days of clear liquids.

Consume a liquid diet of 5-6 protein shakes per day. Approved brands include; Sugar Free Carnation Instant Breakfast, Unjury Medical Quality Protein, Premier Protein, Optifast, or Slim Fast Low Carb. You can either purchase the shakes pre-mixed, or mix powder with 8-10 oz skim milk or soy milk. You can also choose other brands with 2-3 grams of sugar or less per serving. Sugar free yogurt can also be consumed in moderation. The goal is 1000 to 1200 calories per day, with 60-80 grams of protein included per day. Make sure to drink plenty of water as well.

Consume clear liquids only. Look for low or no carb drinks that contain protein. Approved brands include; Isopure Zero Carb drink, Nectar Protein drink, Protein Water, or Special K protein water. Broth, sugar-free jello, and tea can also be consumed during this time. You can also choose other brands with 2-3 grams of sugar or less per serving.

For Patients with Diabetes:

Many of you are on insulin or oral diabetes meds such as glyburide or metformin. Please contact your endocrinologist or primary care provider for instructions on how to adjust your medications during this time to prevent hypoglycemia symptoms. This should be done as soon as you receive these instructions and before starting the above plan.

Helpful Tips

- For variety, you can add flavorings to the full liquid protein shakes. Ideas include a tablespoon of sugar free pudding, sugar free jello, or fresh/frozen fruit. You can also try blending with ice for a smoothie.
- During this time, you may feel hungry and irritable, especially during the first few days. These feelings will gradually decrease. If you have questions or concerns during this process, please contact your local BVSA clinic and discuss with the practitioner you consulted with. We are here to help you through every step of this process.

*Your Practitioner may alter this plan to suit your specific needs.

Pre-Operative Bariatric Sample Menu for Liquid Diet

The goal is 1000 to 1200 Calories per day, aiming to drink 1 ounce of liquid every 15 minutes while awake.

Sample Clear Liquid Diet Menu

Consume clear liquids only. Look for low or no carb drinks that contain protein. Approved brands include; Isopure Zero Carb drink, Nectar Protein drink, Protein Water, or Special K protein water. Broth, sugar free jello, and tea can be consumed during this time.

Below is a Sample Menu plan:

Day 1

Breakfast: 1 cup of juice, $\frac{3}{4}$ cup of clear broth, $\frac{1}{2}$ cup of sugar free lemon gelatin, and 1 cup of coffee

Morning snack: 1 cup of a clear sports drink (sugar free)

Lunch: $\frac{1}{2}$ cup of juice, $\frac{3}{4}$ cup of clear broth, $\frac{3}{4}$ cup of sugar free lemon-lime soda, and 1 Popsicle (equals about 2 ounces of liquid)

Afternoon snack: 1 Popsicle

Evening meal: $\frac{1}{2}$ cup of sugar free juice, $\frac{3}{4}$ cup of clear broth, $\frac{3}{4}$ cup of sugar free ginger ale, $\frac{1}{2}$ cup of sugar free gelatin, and 1 cup of herbal tea with honey or sugar

Evening snack: 1 cup of flavored sugar free gelatin

Day 2

Breakfast: 1 cup sugar free apple juice, 1 cup coffee, $\frac{1}{2}$ cup of flavored sugar free gelatin.

Morning Snack: 1 cup sugar free apple juice, 1 Popsicle, 1 glass water

Lunch: 1 cup tea with honey, 1 cup beef broth, 1 glass water, $\frac{1}{2}$ cup of sugar free flavored gelatin

Afternoon Snack: 1 Popsicle, 1 glass water

Dinner: 1 cup chicken broth, 1 glass water, 1 cup tea, $\frac{1}{2}$ cup of flavored sugar free gelatin

Evening snack: 1 cup sugar free juice

If you are diabetic, be sure to notify your PCP about this liquid diet, so that changes can be made, if needed. This low calorie, low fat diet may cause hypoglycemia without adjustments. Check your blood sugar regularly, and report them to your PCP or endocrinologists.

Sample Full Liquid Diet

Consume a liquid diet of 5-6 Protein shakes per day. Approved brands include sugar free Carnation Instant Breakfast, Unjury Medical Quality Protein, Optifast, Premier Protein, or Slim Fast Low Carb. **NO Ensure.** You can either purchase pre-mixed shakes, or mix powder with 8-10 oz. soy or skim milk. You can also choose other brands with 3 grams or less of sugar. Sugar free yogurt can also be consumed in MODERATION.

Below is a Sample Menu plan:

Day 1

Breakfast: Vanilla or chocolate flavored protein powder smoothie. Mix with half the recommend liquid (water or skim milk) and blend with 10 cubes of ice to make it like a slushee.

Morning Snack: Protein shake.

Lunch: Whey protein powder shake with water or skim milk

Dinner: Liquefied broth based chicken soup.

Day 2

Breakfast: Pre-mixed whey protein shake. Sublingual vitamin B12

Morning Snack: Isopure 8 oz.

Lunch: 1-ounce Prostat liquid protein mixed into no sugar added juice or water

Dinner: Liquefied vegetable soup with two packets of Beneprotein or other non-flavored protein powder.

Day 3

Breakfast: Double milk (8 oz skim milk + 1/3 cup non-fat powdered milk). Sublingual vitamin B12

Morning Snack: Bariatric advantage protein powder with water.

Lunch: Unjury protein powder with water

Dinner: Liquefied low sodium broth based soup.

You must drink non-caloric, non-carbonated and decaffeinated beverages like water, Crystal Light or diet Snapple between the protein shakes.

You can add protein to your sugar free Jell-O if you make your own instead of buying the single serve cups. Just add unflavored protein powder to the boiling water at the same time you add the gelatin powder. You may also have crushed ice with sugar free drink flavoring at any time. Sip on liquids throughout the day.

Sleeve Gastrectomy Skills for Success

- ✓ Eat 3 well-balanced meals a day with 2 protein shakes in between. The protein shakes are to supplement your diet until you can reach 60-80 grams of protein through solid foods. Avoid snacking between meals.
- ✓ Stay hydrated! Sip fluids at a rate of 2-4 oz per hour.
- ✓ Introduce foods slowly, until you know how your new stomach will tolerate foods.
- ✓ Eat very small portions. The serving size per meal should be about 1/4 to 1/2 cup.
- ✓ Use small plates and bowls with baby spoons and forks to help you slow down and eat smaller bites. Bites should be the size of one or two dice.
- ✓ Plan on spending 20 minutes eating each meal. If it takes shorter time to finish meal, you are eating too fast. If longer to finish you are eating too much.
- ✓ STOP eating as soon as you are no longer hungry. If you feel pressure of fullness, you may be eating too much. Overeating can cause vomiting, pain, nausea or possibly may cause your new stomach to stretch.
- ✓ Avoid carbonated beverages.
- ✓ Avoid rice, pasta, and breads.
- ✓ Cook vegetables for the first 3 months after surgery. Raw veggies are too fibrous and difficult to digest immediately after surgery.
- ✓ **Avoid** steak for at least 6 months after surgery.
- ✓ Avoid straws and gum after surgery, they may cause bloating, discomfort, and gas.
- ✓ If you feel bloated or gas after eating dairy foods, try lactaid pill or switch to a lactaid or soy product. Some people develop temporary intolerance to lactose.
- ✓ Always eat protein first, then vegetables, then fruit, and then whole grains. Aim for 20-30 grams of protein per meal.
- ✓ Keep a food log.
- ✓ Exercise! This is key to long term weight loss and maintenance. Walking should be the main exercise for the first 6 weeks. Between 6-8 weeks, more intense exercise can be added.

Medications to Avoid After Gastric Sleeve Surgery

Aspirin- including all aspirin containing products, both enteric coated or children's strength. Brand names include Anacin, Bufferin, and Norgesic products

Alka Seltzer- all products

BC Powder- all products

Coricidin- all products

Doan's pills- all products

Excedrin- all products

Ibuprofen- including Advil, Motrin, and Nuprin, Naproxen, Aleve

Midol- All products

Mobigesic- (all anti-inflammatory)

Pamprin

Pepto Bismol- all products

*** Please check with your PCP before using any over-the-counter medications and make sure your PCP knows you have had a sleeve gastrectomy before starting any prescription medications.

EXPECTED POST OP SYMPTOMS

It is not uncommon to experience pain between the shoulders, neck, back, or down the arm from the carbon dioxide used in laparoscopic procedures causing irritation to the diaphragm. The best thing to do is to walk, be active, and stay well hydrated. It can take as long as 1-2 weeks for the gas to be re-absorbed and the discomfort to resolve completely.

Dizziness

You may feel light headed or dizzy, this is due to the fact that you are not drinking as much liquid as you were able to before surgery. Aim to drink 64 oz of water per day. Remember to sip on fluids every hour and monitor your intake. Place a gallon of water in the fridge in the morning so you know how much you have consumed during the day. If symptoms of lightheadedness or dizziness occur more than three times a day, call our office.

Bowel Pattern Changes

In the beginning you may have loose bowel movements. Your bowel movements will not be regular until you start eating solid foods. For most patients, bowel habit should become regular and you should have one bowel movement every day and usually less in quantity than you used to.

Nausea and/or Vomiting

You may experience some nausea the first few months after surgery. It is important to remember your new stomach can only hold about 2-4 oz. and can become "overwhelmed" easy. You must eat slowly and stop when you start to feel full. Vomiting can occur if you are eating too fast, too much, not chewing your food well, and/or poor food choices. Follow the dietary guidelines strictly.

Activity and limitations

You need to walk as often as you can. No lifting over 15-20 pounds. No excessive bending, stooping, reaching, or twisting. No strenuous exercise for 6 weeks after surgery. This next month is about healing and good nutrition, not the weight loss.

Advancing your Diet after Gastric Sleeve Surgery

Phase I

1. You will be discharged home from the hospital 1-3 days after surgery.
2. Your first three days after surgery you will have clear liquids only.
3. Clear Liquid Foods:
 - Clear liquid protein supplement ***
 - Beef or chicken broth
 - Sugar free Jell-o
 - Crystal Light
 - Sugar free Kool-Aid
 - Decaf tea-no herbal tea
 - NO Carbonated beverages
4. Phase I rules:
 - NO Carbonated beverages
 - Sip no more than 2-3oz at a time
 - Stop when you are full, even if you consume less than 2-3oz
 - Consume 60-80 grams protein each day
 - Take 1 Chewable multivitamin twice a day (1 adult vitamin or 2 children vitamin)
 - Take vitamin B12 500-1000mcg daily- may use the type that dissolves under the tongue
 - Continue walking each day- gradually increase to at least 30 minutes each day

***Phase I Clear Liquid Protein supplement- You will need to drink 60-80 grams of protein per day. Plan to buy a 3 day supply of any of the following choices: (you can also choose other brands with 2-3 grams of sugar or less per serving)

- New-Whey Liquid- one 3 oz. serving contains 42 grams protein. Sold at GNC or online.
- Zero Carb Isopure RTD- one 20 oz. bottle contains 40 grams protein. Sold at GNC or online.
- EAS Precision Protein- one 20 oz. bottle contains 42 grams protein. Sold at GNC or online.
- Nitro Core- one 20 oz. bottle contains 35 grams protein. Sold at Nutri-Sport or online.
- Pro Balance- one 16.9 oz bottle contains 15 grams of protein. Sold at Dollar General.
- Protein2O- one 16.9 oz bottle contains 15 grams of protein. Sold at Walmart.

Advancing your Diet after Surgery

Phase II

5. You will be on a Full Liquid Diet on days 4-14 at home after surgery.
6. Full Liquid Foods:
 - Anything from Phase I
 - Protein drinks that are low in carbs and high in protein***
 - Skim milk, soy milk, other low fat milk
 - Low fat cream soups- chicken, mushroom, broccoli, celery (no potato or corn)
 - Low fat cottage cheese
 - Low fat/low sugar yogurt- CarbFreedom, or Dannon's Light n fit
 - Tip: you can add your unflavored Protein powder to any of these
7. Phase II rules:
 - Consume liquids that have higher nutritional value that can be milk based
 - Sip on water or other sugar free non-carbonated drinks throughout the day
 - Always stop drinking when you feel full
 - Take 1 chewable multivitamin twice a day (1 adult vitamin or 2 children vitamin)
 - Take vitamin B12 500-1000 mcg daily- may use the type that dissolves under the tongue
 - Continue walking each day. Gradually increase to 2 miles a day by the end of week 2

***Phase II protein shakes include any of the following 100% Whey Protein Isolate Supplement. You will need to consume a total 60-80 grams of protein per day:

- OPTIPRO powder- one scoop contains 22 grams protein. Sold at GNC, Walmart, or online.
- EAS Myoplex- one 17 oz. serving contains 42 grams protein. Sold at GNC, Walmart, or online.
- EAS Myoplex light- one 11 oz. serving contains 25 grams protein. Sold at GNC, Walmart, or online.
- Carb Solutions (canned drink or powder)- one serving contains 20 grams protein. Sold at GNC, Walmart, or online.
- EAS Whey Protein powder- one scoop contains 21 grams protein. Sold at GNC, Walmart, or online.
- EAS Advantage- one 11 oz. can equals 15-20 grams protein. Sold at GNC, Walmart, or online.
- Atkins Nutritional Shakes- one 11 oz. can equals 18-20 grams protein. Sold at GNC, Walmart, or online.
- Optimum Nutrition 100% Whey Protein powder- one scoop equals 23 grams protein. Sold at GNC.
- Premier Protein- one 11 oz. bottle is 30 grams of protein. Sold at Walgreens, Walmart, or online.

Advancing your Diet after Surgery

Phase III

1. Phase III lasts through weeks 3 and 4 after going home.
2. During this time, you can gradually add soft foods to your diet.
3. Soft Diet Foods:
 - Protein Foods- Any soft meat or fish such as canned tuna, salmon, crabmeat. Turkey or chicken is ok if very well cooked and soft. Sliced deli meat, smooth peanut butter, tofu, cheese, eggs, and cooked beans (can cause gas so go slow). Eat some protein every 3-4 hours.
 - Vegetables- Must be soft, well steamed, or boiled. Carrots, beets, mushrooms, spinach, squash, green beans are good to start with. Slowly add asparagus, broccoli, cauliflower and onions.
 - Fruits- Must be soft, peeled, cored and NON-citrus (no orange or grapefruit). Blueberries, strawberries, pears, raspberries, blackberries, cantaloupe work well. (Small Amounts)
 - Starches- NONE- No rice, no potatoes, no pasta, no bread, no corn, no crackers, no grits, no dry cereal, no oatmeal, no chips. These foods are not tolerated well after the sleeve and avoiding starches will assist with weight loss.
 - Fats- Limit the amounts of margarine; olive oil; low fat mayo; and salad dressing. Use cooking sprays to cook with. No fried food, no fast-food.
4. Phase III rules:
 - CHEW, CHEW, CHEW until your food is a pureed consistency in your mouth and eat slowly
 - Eat no more than 2-4 oz. of food at a meal time
 - Take very small bites; use child sized plates and utensils
 - When you start to feel full- STOP EATING. Do not over fill your new stomach
 - Do not eat and drink at the same time- STOP drinking 30 minutes before eating and wait 30 minutes after eating before you drink again
 - Season your food as you wish but be cautious with spices and salt
 - ALWAYS eat your protein first- make it most of your meal- eat vegetables next and fruit last
 - Consume 60-80g of protein each day
 - Take 1 chewable multivitamin twice a day (1 adult vitamin or 2 children vitamin)
 - Take vitamin B12 500-1000mcg daily- may use the type that dissolves under the tongue
 - Continue walking each day- minimum of 30 minutes a day

Advancing your Diet after Surgery

One month and beyond

- Meals- Consume 3 meals daily which should consist of:
 - 3 oz. lean protein source (from Phase III list). Always eat protein first and make it most of your meal, eating vegetables next and fruit last
 - ¼ cup vegetables
 - Avoid starches- no pasta, rice, potatoes, corn, bread, chips, crackers, oatmeal, etc.
 - No fried foods. No greasy foods. No spicy foods.
 - ALWAYS eat your protein first
- Beverages
 - Water: eight 8 oz. glasses daily
 - Decaffeinated coffee may be added one month after surgery
 - AVOID alcohol, carbonated beverages, and concentrated sweets
 - Do not eat and drink at the same time- STOP drinking 30 minutes before eating and wait 30 minutes after eating before you drink again
- One month and beyond rules
 - Substitute with Phase I or II protein supplements as needed to reach your protein goal
 - CHEW, CHEW, CHEW until your food is a pureed consistency in your mouth and eat slowly
 - Take very small bites; use child sized plates and utensils
 - When you start to feel full- STOP EATING. Do not over fill your new stomach
 - Season your food as you wish but be cautious with spices and salt
 - Consume 60-80 g of protein each day
 - Take 1 Chewable multivitamin twice a day (1 adult vitamin or 2 children vitamin)
 - Take vitamin B12 500-1000mcg daily- may use the type that dissolves under the tongue
 - Continue walking each day- Minimum of 30 minutes a day

Two months and beyond

- Eat proteins first, make protein at least half of your meal
- Have vegetables
- CHEW, CHEW, CHEW until your food is a pureed consistency in your mouth and eat slowly
- When you start to feel full- STOP EATING. Do not over fill your new stomach
- Season your food as you wish but be cautious with spices
- Consume 60-80 g of protein each day
- Continue taking a multivitamin and B12 supplement daily
- Continue walking each day, minimum of 30 minutes a day

Advancing your Diet after Surgery

Be cautious with the following:

- **Red meat**- wait **6-8** months before you try red meat. You will need to chew very thoroughly for red meat to be digested. Lean cuts are best. If red meat is not tolerated, wait a few weeks before trying again
- **Starches**- avoid/limit starches such as pasta, bread, potatoes, rice, corn, chips, crackers, grits, oatmeal, etc. Wait 6-8 months before consuming to promote greater weight loss. Some people will never tolerate starches well after surgery. Overcook pasta and rice before eating to ensure that it won't continue to swell in your stomach.
- **Alcohol**- You must use extreme caution when drinking alcohol after surgery. It will be absorbed much more quickly, and you will experience a greater degree of intoxication on very little alcohol because of its rapid absorption. Do not drink and drive. Red wine is the best choice if consuming alcohol.
- **Sweets and sugars**- Avoid concentrated sweets such as fruit juices, candy, sugary desserts, salad dressing and barbeque sauces that contain sugar. If you are craving sweets, have a piece of fruit with your meal. Do not snack on sweets between meals.
- **Fats**- Avoid/limit intake of fats such as cooking oil, salad dressing, mayonnaise, margarine, and butter. Eating these foods will slow down weight loss. Instead, use cooking spray, low fat mayo, fat-free salad dressings, mustard, etc. Avoid greasy food, fried food, and fast food. Read labels to see how much fat a food contains. If it contains more than 3 grams of fat per 100 calories, it is a high fat food that should be avoided.
- **Beverages**- Consuming eight 8 oz. glasses of water per day is vital. Avoid flavored beverages such as carbonated beverages, fruit juice and alcohol. Diet carbonated beverages can expand the stomach and slow weight loss. Sugar-free flavored water is allowed.