

Patient Education for Weight Loss Surgery Part 1 – Anatomy

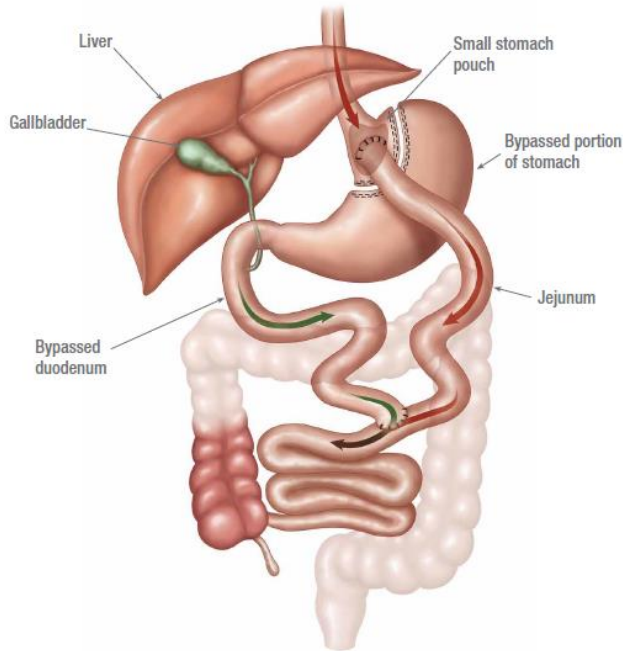
WHO TO CALL

| If you have questions about: | Contact: |
|--|--|
| Making or changing an appointment | GI Surgery Scheduling Line: 843-792-7929 |
| Your clinical care (non-emergent) After surgery clinical care | Bariatric RN Coordinator, Beth Fogle MHA, RN, CBN (843-876-7920) fogleeli@musc.edu Bariatric Nurse Practitioner, Lauren Timmerman, NP Send Mychart message or contact the GI surgery clinic at (843-876-5788) |
| Insurance Requirements, Insurance approval, Scheduling Surgery Adolescent Bariatric Program | Janine Garey (843-876-7226) garey@musc.edu Alyshia Clark (843-876-4264) clarkaly@musc.edu |
| Nutrition, Diet, or Vitamins | Bariatric Dietitian, Amanda Peterson, RD (843-876-4867) peterama@musc.edu |
| Behavior medicine/psychology | Bariatric Program Social Worker, Jessica Hinton, LMSW (843-876-5925) hintonjh@musc.edu Behavioral Medicine Clinic at 67 President Street (843-792-0686); Appointments (843-792-9162) |
| Nutrition, Diet, or Vitamins | Bariatric Dietitian, Amanda Peterson, RD peterama@musc.edu Bariatric RDs can be reached at (843) 876-4867 or (843) 876-4307 |
| Financial Services: co-pay, self-pay, billing | Financial Counselor: Georgette Gadsden (843) 876-4864 |
| Exercise Program (cardiac rehab) | Center at 122 Bee Street, Suite 201 (843) 792-5014 |
| Endoscopy (if you were referred for EGD) | General GI Scheduling (843) 792-6982 |
| Radiology (if you were referred for X-ray) | Radiology (843) 792-9729 |
| Sign up for MyChart (Pg.6) | <ul style="list-style-type: none"> •View and request appointments •Retrieve test results •Update demographic information •Make secure credit card payments •Communicate with your doctor by sending and receiving secure messages <ul style="list-style-type: none"> •Request prescriptions and refills •View personal health information •View billing statements and balance |

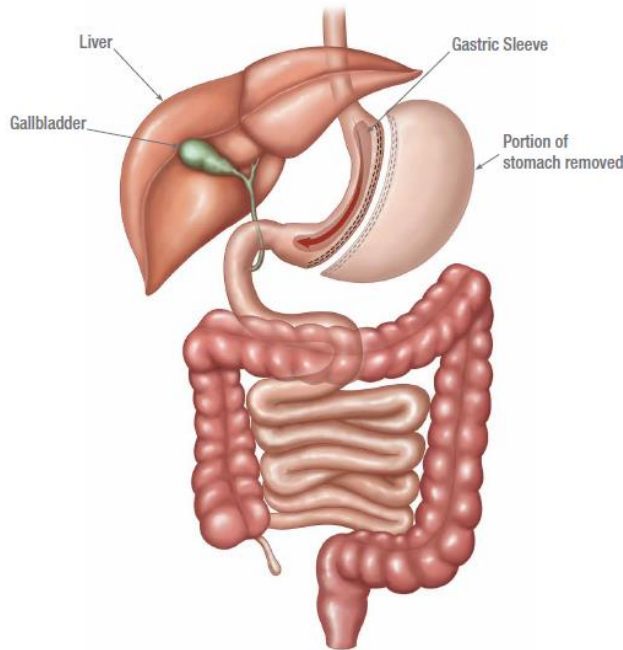


Bariatric Procedures at MUSC

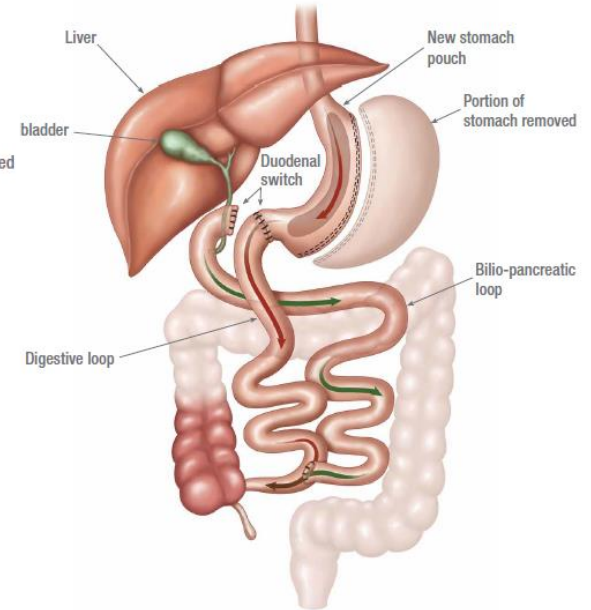
Roux-en-y Gastric Bypass



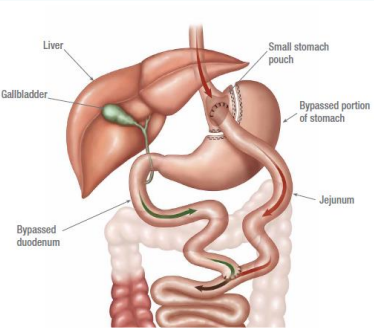
Vertical Sleeve Gastrectomy



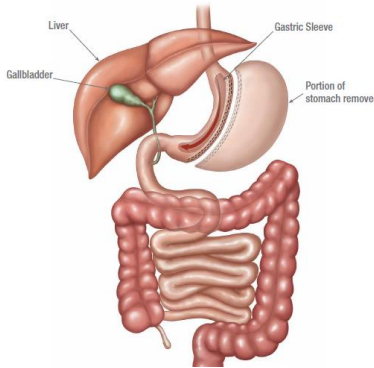
Biliopancreatic Diversion with Duodenal Switch



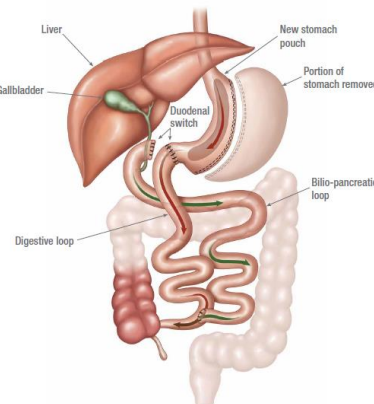
Weight Loss Surgery: How they work



Roux-en-y Gastric Bypass (RYGB) is a procedure with a combination of restrictive and malabsorptive components. The surgery reduces the size of your stomach to a small pouch about the size of an egg. This reduces the amount of food you can eat. The surgeon also re-routes part of your small intestines and re-attaches small intestine to your new pouch. This reduces the amount of nutrition (calories, vitamins, and minerals) you absorb from the foods you eat. The surgical changes also reduce your gut hormones that promote satiety and suppress hunger.



Vertical Sleeve Gastrectomy (VSG) commonly called “the sleeve” is a restrictive procedure. The surgeon removes approximately 80% of the stomach. The remaining stomach is a tubular pouch that resembles a banana. The surgical changes also reduce your gut hormones that promote satiety and suppress hunger.



Biliopancreatic Diversion with Duodenal Switch – (BPD/DS) commonly called the “Switch” is a procedure with two components. First, a tubular pouch is created similar to the sleeve gastrectomy. Next, a large portion of the small intestine is bypassed. There is a significant decrease in the absorption of calories, fat soluble vitamins and nutrients. The surgical changes also reduce your gut hormones that promote satiety and suppress hunger.



Weight Loss Surgery: for other reasons

Revision/Conversion Procedures – Sometimes patients will require a revision to a previous bariatric procedure. The same postoperative nutritional guidelines will apply, and vitamin supplements will be required for life.

Bariatric Surgery for other medical conditions – Some patients will require a Gastrointestinal surgery that is very similar to gastric bypass or sleeve gastrectomy, and will be required to follow the same postoperative nutritional guidelines and vitamin supplements.

Drains - BPD/DS patients will leave with a drain intact. Some revisions/conversions may have a drain. Drains will remain intact for one week ~ you will be seen in clinic in one week to determine removal.



Dumping Syndrome

Dumping Syndrome is a condition that CAN develop after bariatric surgery.

Dumping syndrome is caused by rapid gastric emptying and delivery of food, especially sugar, to the small intestines.

Early dumping: 10-30 minutes after eating

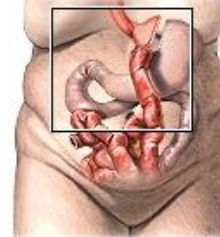
- bloating
- sweating, flushing, lightheadedness
- abdominal cramps/nausea
- stomach rumbling
- urge to lie down
- rapid heartbeat
- diarrhea

Late dumping: 1-3 hours after eating

Symptoms are the same; however, they are caused by a release of large amounts of insulin to absorb the sugars entering your small intestines resulting low blood sugar.

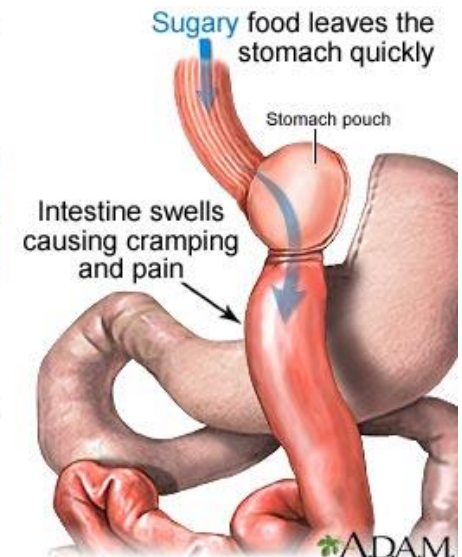
Dumping Syndrome is most common after gastric bypass, but similar symptoms can be experienced after all bariatric surgery types. Patients should avoid added sugar to minimize the chance of dumping and maximize weight loss after surgery.

Post gastric bypass surgery



Other symptoms include:

- fast heart rate
- sweating
- nausea
- diarrhea or vomiting



Preventing Dumping Syndrome

Preventing Dumping Syndrome

- Avoid simple sugars such as sweets, candy, soda, cakes, and cookies
- Eat small, frequent meals (4-6 times every day)
- Do not drink liquids with your meal
- Avoid foods that are very hot or very cold

When to see your Doctor

- If your symptoms are not controlled by dietary changes
- If you are losing large amounts of weight due to dumping syndrome



What to do before surgery

You must be established with a Primary Care Provider-schedule appt to be seen within 1-2 weeks after surgery.

Women of child-bearing age: Recommend 2 forms of birth control as fertility increases after weight loss surgery.

Smoking Policy - 3 months **nicotine-free** by surgery

Alcohol – Abstain 48 hours prior to surgery and it is not recommended after weight loss surgery!

Notify us-fever, cold, new/persistent cough, new onset diarrhea with vomiting.

843-792-3046

If your numbers/email address changes, please tell us



Patient Education for Weight Loss Surgery Part 2 – Preoperative to Postoperative phase



Once you have a surgery date you will be scheduled for a pre-op visit

Preoperative visit (1-2 weeks before surgery) in GI Clinic

- › Clinic visit with Lauren, NP
 - › Informed consent is signed
- › Meet with dietitian
- › Anesthesia clearance
 - › Pre-op clinic on 4th floor in Rutledge Tower, EKG, lab/test review
 - › Skin prep soap for use night before surgery and morning of surgery
 - › Recommend clean sheets and clean pajamas

Time for your surgery: You will receive a call from the hospital 1-2 days prior to surgery with arrival time!

- › If you haven't heard day before – call **843-876-5276**



What to bring with you

What to Bring

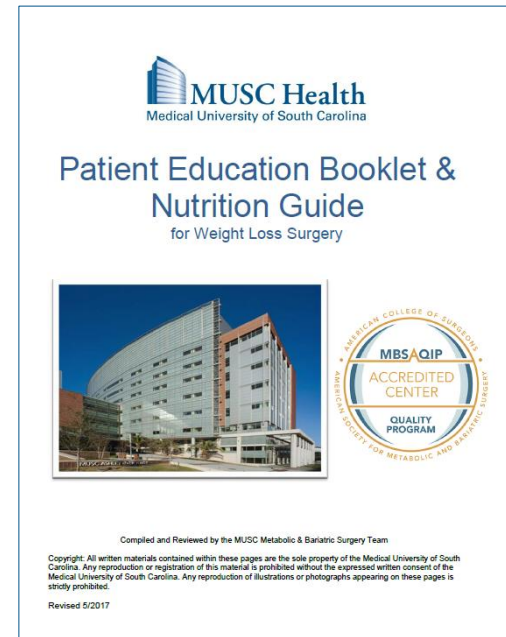
- › ID and insurance cards
- › Patient education booklet
- › Pajamas, slippers, bathrobe
- › Clothes to wear home
- › **Cane or walker**
- › **C-PAP/BiPAP mask/tubing/machine**
- › **List** of your medications

What to give to your Family

- › Dentures
- › Glasses/contacts
- › Hearing aids
- › Assistive devices

What to Leave at Home

- › Valuables
- › Medications
- › If bring your cell phone, be sure to have it password protected and keep it in view



Day of Surgery



First Floor

Ashley River Tower

You will need your insurance card and ID



You will get an identification bracelet, sign papers and then be directed to the 4th floor.



Surgery and Recovery

Family Waiting

- › Family will get to go back to HOLDING area once patient ready for surgery
- › Surgeons come out and talk to the family after surgery
- › Please provide waiting area receptionist a phone number if you leave
- › One adult > 18 y/o may stay overnight with you in room

Recovery (PACU)-where you go after surgery is completed

- › Monitor until vital signs stable and then you will be moved to the 6th floor (6 East)
- › May go to the Intensive Care Unit (MSICU) if closer supervision is required
- › May stay overnight in PACU if no bed is available



Operating Room



What about Pain?

Enhanced Recovery After Surgery (ERAS)



Oral pain medication

- › Goal is to enhance your recovery after surgery a combination of an opioid, Gabapentin, and Tylenol
- › You will be discharged with no more than a 3 day supply of opiate pain medication
 - › SC state law has imposed limitations on the amount of opiate medication prescribed for surgical patients
 - › If you require more opiate pain medication, you will need a clinic appointment to assess your continued pain
 - › If you have a pain contract or are prescribed opiate pain medications prior to surgery, you will need to coordinate pain control/management with that provider



Ways to improve your recovery

WALK...WALK....WALK

- › Goal is to be out of bed within 2-4 hours after surgery
- › Walking the halls at least 3-4 times each day
- › Focus on being out of your bed – in chair or walking

Sequential Compression Devices (SCD)-prevent development of blood clots

- › Placed before surgery in HOLDING
- › Gently squeeze lower legs
- › Worn at all times while you are in bed or up in chair
- › Connected and turned ON!



Ways to improve your recovery (cont'd)

Incentive Spirometer-decrease chance of pneumonia

- › Nurses will teach you how to use
 - › Take slow deep breaths
 - › Aim for 10 times an hour
 - › Continue for 1 week after discharge at home



Managing your diabetes

- › If you have diabetes and use insulin, you will be seen by diabetes management services while in the hospital and will also be instructed how to manage your medications once you leave hospital



Medications after surgery/at discharge

No need to crush medications

- › If pill is large – cut/split in half (check with pharmacist)-*scored
- › For Gastric Bypass - Check with PCP regarding extended release medications-change to short acting

Narcotic pain med

- › Oxycodone- you have the option to refuse
- › Neurontin (Gabapentin)- nerve pain medication

Anti-emetics (anti-nausea)

- › Zofran or Phenergan

Proton Pump Inhibitor (PPI)-Omeprazole (Prilosec)

- › Sleeve/BPD/DS 1 month postop
- › Bypass 3 months postop
- › PPI therapy will be assessed at one month visit

Ursodiol –**Only** for patients with a gallbladder

- › Start **ONE** week postop – continue for **6 months!**

**May require a blood thinner –patient specific/surgeon ordered



Medications to avoid after gastric bypass

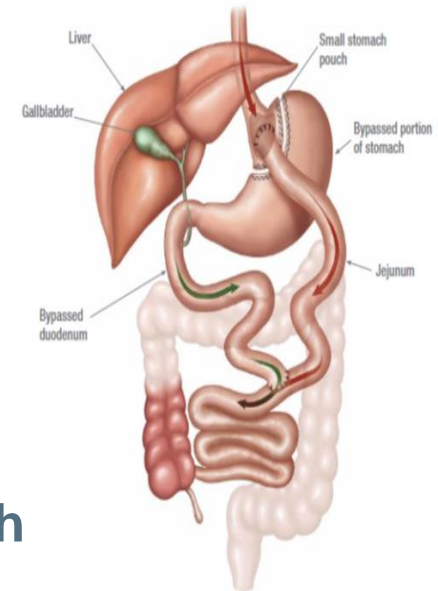
NSAIDs(non-steroidal anti-inflammatory drugs)

- › Advil, Motrin, Aleve, Ibuprofen
- › Goody's or BC powder
- › Excedrin
- › Pepto Bismol
- › Aspirin-81mg & 325mg **OK**
- › Steroids-long term

**There are multiple prescription strength NSAIDs

Take this instead: Tylenol regular or extra-strength

- › It is OK to take antibiotics after bariatric surgery



Patient Education for Weight Loss Surgery Part 3 – At home



Taking Care at Home

Time off work

- › You can be out of work ~2-6 weeks (depending on your job)
- › FMLA paperwork or work excuse requests should be faxed to **843-876-4201**
 - › Include all your information, name, surgery date, time requested off, and how to contact you if questions
 - › Turnaround time 10-14 days

Activity

- › Walking every hour for at least a few minutes (while awake)-goal is to increase your overall walking/exercise time
- › Limitations for 1 month after surgery
 - › No lifting anything heavier than a gallon of milk or 10lbs max
 - › No abdominal exercises/weightlifting
 - › No heavy housework (vacuuming, mopping)
- › No driving for 1 week (if still taking pain meds or if you have a drain)
- › Shower when you get home, but do NOT submerge your belly into a body of water (pool, tub, ocean) until all incisions are completely closed



Infections to watch for

Wound Infection

- › Keep incisions clean and dry –**do not use ointments**
- › Foul odor at wound site
- › Swelling, redness, drainage and unusual pain
- › Fever greater than 100.0° F

Lung Infection

- › Cough that won't go away
- › Fever greater than 100.0° F
- › Shortness of breath

Urinary Tract Infection

- › Strong, persistent urge to urinate
- › Cloudy or dark urine with strong odor
- › Fever greater than 100.0° F



Incisions



When to notify us

1. Pain in abdomen

- › New pain or worse pain than day you left the hospital
- › Pain with vomiting and no bowel movements

2. Vomiting

- › Check portion size & rate of eating
- › Ensure you're not eating and drinking at same time
- › Are you taking your Zofran or Phenergan?

3. Constipation

- › Common immediately post-surgery
- › Ensure you're getting in 64 oz of fluids
- › Movement helps- walk, walk, walk
- › Ok to try Milk of Magnesia, Miralax, Senakot, Dulcolax, Fleetsenema



If you need HELP during your 1st month

Refer to you 30 day survival guide & HELP card

Bariatric Surgery Help Card: Contact Info

Please call us any time after discharge with questions or concerns

Daytime/Weekdays 7 am-3 pm:

- Nursing Triage (GI Surgery Clinic): 843-876-5788
- Nutrition/Dietitian: 843-876-4867
- Bariatric Program RN Coordinator: 843-876-7920

Afterhours/Weekends 3 pm-7 am:

- Emergency: Dial 911
- Hospital (MUSC Ashley River Tower): 843-792-2123
- *ask for GI Surgery Resident On Call*





Emergency



If you experience sudden onset of shortness of breath, chest pain, rapid heartbeat, persistent leg/calf pain, vomiting blood or passing blood from your rectum, call 911!

- › Seek Emergency Care Immediately At Your Local ER!



After Surgery Timeline



- 1st appointment - 30-days after surgery-your appointment will be made prior to discharge (within a week if drain placed)-**843-792-7929**
- Discharge nurse will call you 2-5 days after surgery to check on you
- If you miss your 1st month appointment, Deb, our clinical reviewer will call you
- Labs

- › We start checking labs at 3 months for BPD-DS (Switch)
- › 6 months for RNY (gastric bypass) & Sleeve
- › You do **NOT** have to fast for labs



- After every clinic visit, stop at front desk to make your next appointment
- If you move or change phone numbers, please contact **843-876-7920!**

We will help you find an MBSAQIP-accredited program for your continued aftercare.

Bariatric Surgery Centers accredited with MBSAQIP

<https://www.facs.org/search/bariatric-surgery-centers>



Follow Up Timeline

| Follow Up Appointment Time | Provider |
|----------------------------|---|
| 1 month | Medical Team & Dietitian (RD) |
| 3 months | Dietitian (RD) & Psychologist |
| 6 months | NP & Dietitian (RD) |
| 12 months | NP & Dietitian (RD) |
| 18 months | Dietitian (RD) & Psychologist |
| 2 years | NP & Dietitian (RD) |
| 3 years | NP (if needing RD will do referral for individual counseling visit) |

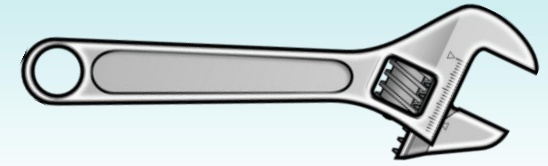


Part 4



Nutrition Education

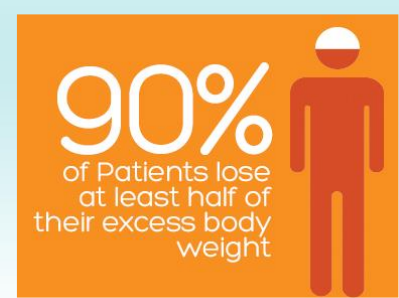
Goals After Surgery



- Weight loss surgery is not a “magic bullet” for losing weight. It is a tool to help you lose weight. Using the “tool” correctly is your responsibility.
- The goal of surgery is to provide you with the ability to feel **FULL QUICKLY**, and stay **FULL LONGER** on **SMALLER PORTIONS** of food – **YOU** control the quality of what you eat (and we are here to help you improve your choices!)
- Maintaining healthy behaviors for life will minimize your risk of weight regain.



Expectations After Surgery



You can expect to lose the most weight during the first 6 months, but will continue to lose weight over 12-18 months

Significant weight regain is not common, but can occur, and your team will work with you to determine an appropriate plan of action – so be sure to stay in touch with us, even if you regain some weight

We encourage you to set goals that are not about your weight (non-scale motivators), as these can help encourage you to stick with the plan for the long haul

- › Movement
 - › “I want to get on the floor and play with my grandkids”
- › Exercise/fitness goals
 - › “I want to be able to walk a 5K (3.2 miles)”
- › Eating habits
 - › “I want to try new, healthy foods to nourish my body”
- › Medications
 - › “I hope to get off all my diabetes medications, and only take vitamins!”



Diet Progression in the Hospital

| | |
|-------------------------|--|
| Bariatric Clear Liquid: | 1-2 ounces of clear liquids every hour |
| Bariatric Full Liquid: | Full liquids (protein liquids), frequent small amounts |
| Bariatric Pureed: | pureed foods, frequent small amounts |



Bariatric Surgery
Clear Liquid Diet



Bariatric Surgery
Full Liquid Diet



Bariatric Surgery
Pureed Diet



Inpatient Stay

Your diet will be advanced to the next stage per doctor's orders

- › Standard trays & 'At Your Request' room service program

After discharge, you will eat only pureed food for 4 weeks (or 30 days)

Primary GOALS for the first month:

- › Sip on 64 ounces of fluid
- › Take bites of protein-rich PUREED (blended) foods
- › Take your vitamins as outlined by your Dietitians!



Fluids - Sip, Sip, Sip

How?

- To get in **64 ounces per day**, drink **4 ounces/hour** for **16 hours** or **1 ounce** (about a shot glass) **every 15 minutes**.
- Use a timer, your phone alarm, or a friend to remind you to drink.
- It is most important to stay hydrated – even more than eating!

What?

- Low calorie (<20 per serving) and non-carbonated (WATER IS BEST!)



Protein-Rich Pureed Foods: First 4 Weeks

Survival Guide

1st Month Post-Weight Loss Surgery



Your Dietitians:

Amanda Peterson
843-876-4867
peteama@musc.edu

Molly Jones
843-876-4307
jonnol@musc.edu

Your Nurses:

Beth Fogle
Nurse Coordinator
843-876-7920
fogleeli@musc.edu

GI Surgery Clinic
Nursing Line:
(7 am - 3 pm)
843-876-5788

Leave a message, they will return call

After hours or weekend
Call 843-792-2123
ask for GI Surgery
Residents on Call or
come to Chest Pain
Center at Ashley River
Tower (our ER)

Nutrition Goals - 1st Month



Aim for 64 ounces of Fluid per Day
Don't eat and drink at the same time
Wait 30 minutes after eating to drink fluids



Eat Small Meals/Snacks - 4-6 times/day
A "meal" may be a few bites every 3-4 hours. Make sure every eating occasion contains a source of protein



Start taking your Vitamins Daily
Remember your Dietitian has outlined what you need to take based on your labs

All about Blended/Pureed Texture

Eating Soft, Blended, Pureed foods for the first 30 days after surgery allows you to heal, and reduces the amount of work on new stomach. Getting in your Fluids and choosing Protein-rich options when you do eat is the focus during this recovery period.

There are many options that are already this texture (see following pages), but if you want to blend foods yourself, here are some easy steps:

1. Cut food into small pieces about the size of your thumbnail
2. Place food in blender or food processor
3. Blend together until texture is smooth like applesauce

For the first 4 weeks after your surgery, you must eat all foods in a liquid or blended/pureed form

- › The reason for this is to make sure you heal
- › Begin the pureed diet as soon as you go home
- › Eating any solid food may cause severe pain, nausea and/or vomiting

You can use a blender, a food processor, or buy foods that are already a pureed, blended texture

You will meet with a dietitian at your pre-surgical work up visit to discuss a plan for the first month. You will receive the **“Survival Guide for your First Month Post-Weight Loss Surgery”** Booklet for more info!



Protein Choices: Pureed texture for 1st month

Pureed meats

- › Cooked, then blended with broth or water- add to 4-8 oz of broth
- › Lean/skinless turkey, chicken, beef, fish, tuna, veal, venison

Baby food meats

- › Use any seasonings except sugar to flavor

Beans

- › Fat-Free Refried beans (from the grocery store) or mashed limas, pintos, black beans or black-eyed peas or hummus (blended chickpeas)

Soups

- › Low-fat veggie, bean, lentil, chili, or meat-based soups (no noodles/rice)
- › Blend chunky soups in the blender and add pureed meats

Peanut butter

- › Natural (no added sugar) peanut butter off the spoon or in a smoothie

Silken tofu

- › Good addition to soups (no flavor but adds protein)



Protein Choices: Pureed texture for 1st month

Homemade smoothie

- › Blend any combo of milk, yogurt, carnation instant breakfast, peanut butter, eggbeaters, vanilla or almond extract, ice, etc.

Protein shakes

- › With no added sugars (see section on protein shakes)

Cheese

- › Melted low-fat or fat-free
- › Soft cheese like *Laughing Cow Light*

Cottage Cheese (lowfat/nonfat)

- › Add some blended fruit or unsweetened applesauce

Ricotta cheese (lowfat/nonfat)

- › Flavor with lemon/almond extract, artificial sweetener, or tomato sauce

Yogurt

- › Fat-free, No Added Sugar Regular Yogurts (*Dannon Light and Fit*, *Activia Light*, *Low Fat Plain*, *Breyer's Light*)
- › Greek Yogurt (nonfat, 0%)
 - › Plain (*Fage*, *Oikos*, *Yoplait*, *Dannon*, or *Chobani* brands)
 - › Artificially sweetened (*Dannon Light and Fit Greek*, *Yoplait Greek 100*, *Oikos Triple Zero*)

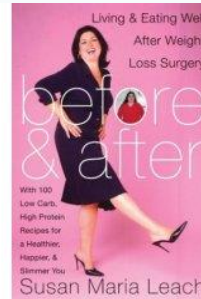
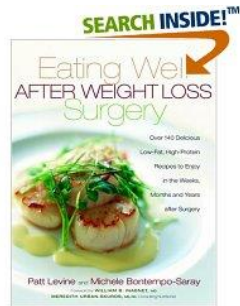
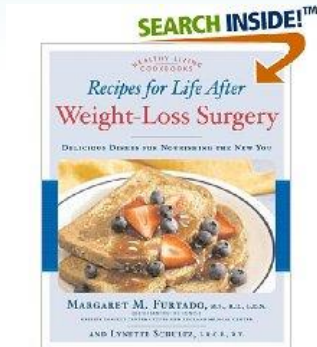
Egg, egg substitute, or egg whites pureed

- › Mashed/blended scrambled eggs moistened with milk

Sugar-free pudding (made with your own skim milk)



How to Blend & Recipe Ideas



Be creative with your recipes and try new cookbooks or websites.

Watch “how-to” video on our website:

<http://www.muschealth.org/weight-loss-surgery/nutrition/index.html>

You can also get ideas from the Recipe Corner on our website:

<http://www.muschealth.org/weight-loss-surgery/nutrition/recipe-corner.html>



Protein Supplements and Satiety

- The preferred source of protein in your diet is “real food” such as pureed meats, low-fat dairy, eggs, pureed beans and soy because they FILL YOU UP!
- Remember that weight loss surgery was designed to keep you feeling full on small amounts of solid foods
- If you are drinking protein shakes and not feeling full or satisfied for a few hours, it is likely moving through your system too quickly
- You will feel fuller for longer when you eat small bites of solid protein-based foods that sit longer in your pouch



Protein Supplements – What to Choose

- **At least 15 grams of protein and less than 5 grams of sugar**
- If you are having difficulty eating at least **60 grams of protein** per day, protein supplements may help you increase your protein intake (especially in first few months)
- Remember that dried nonfat milk offers 8 grams of protein per 1/3 cup and sugar-free carnation instant breakfast adds 4 grams of protein per packet



Protein Supplement Options

| | NAME | Flavors | Calories | Protein (g) | Fat (g) | Carbs (g) |
|--|--|---|----------|-------------|---------|------------------|
| Ready to Drink | Premier Protein Shake | Chocolate, Vanilla Strawberries and Cream | 160 | 30 | 3 | 5 |
| | Isopure | Many fruit flavors plus green tea | 160 | 40 | 0 | 0 |
| | Ensure High Protein | Milk Chocolate, Vanilla | 210 | 25 | 2.5 | 23 (3g fiber) |
| | Slim Fast High Protein | Creamy Milk Chocolate, Vanilla Cream | 180 | 20 | 9 | 4 |
| | Atkins Advantage Shake | Strawberry, chocolate, vanilla | 160 | 15 | 9 | 4 (2g fiber) |
| | Muscle Milk Light | Many flavors including banana, chocolate and caramel | 195 | 25 | 6 | 11 (1g fiber) |
| Powder: mix in milk, water, crystal light | Unjury powder | Strawberry, chocolate, vanilla, unflavored, chicken | 100 | 20 | 0 | 4 |
| | Dry skim milk | Plain | 90 | 9 | 0 | 13 |
| | Nectar (try mixing it in crystal light) | many fruit flavors plus chocolate, vanilla, cappuccino | 100 | 23 | 0 | 0 |
| | Bariatric Fusion High Protein, Low Carb Meal Replacement | many flavors including chocolate mousse, orange cream and cinnamon bun | 150 | 27 | 2 | 9 (5g fiber) |



Transitioning to Regular Texture

- You will have a 'small group' appointment with RD after seeing MD about 1 month after surgery
- Will be made upon discharge ~8-9 AM on a Thursday
- Slow transition from pureed to regular textured foods
- Individualized plan
 - › Timing
 - › Pairing protein & produce
 - › Fluids
 - › Vitamins
- Begin exercise regimen

| Time | PROTEIN | PRODUCE | EXTRAS (like Starch, Added Fat, condiments) |
|------|---------|---------|--|
| | | | |
| | | | |
| | | | |
| | | | |



Long-Term Eating Behaviors

- Eat 4-6 small meals/snacks
 - Your meal/snack may be just a couple bites!
- Eat small bites, very slowly, chew well (20-30 chews per bite)
- Avoid snacking or grazing throughout the day
 - Plan all your eating occasions ahead
- Find a routine to get in your VITAMINS daily for LIFE
- Exercise optimizes your long term weight loss – aim for daily



Meal Plan for LIFE



Fluids

- › Drink ~64 ounces fluid/day – no carbonation, low-calorie (<20/serving)
- › Don't eat and drink at the same time - Wait 30-60 minutes after eating to resume sipping on your fluids

Eating Pattern

- › After surgery, we suggest the following food groups to meet your needs (rather than strict calorie counting)

| Food Group | Servings | Grams protein per serving |
|--|----------|---------------------------|
| Protein-Rich Foods (Meat/Fish, Beans, Dairy) | 8 | 7-8 |
| Produce (Vegetables, Fruits) | 4 | 0-2 |
| Starch | 2 | 3 |
| Fat | 3 | 0 |



Protein-Rich Foods

- The protein foods (meat, eggs, low-fat dairy) continue to be a priority, as they will keep you FULL for longer
- Aim for at least 60 grams protein daily
- We encourage you to COMBINE/PAIR foods from PROTEIN group with PRODUCE group for maximum fullness



Protein-Rich Foods – Aim for 8 per day

| Types of food | Portion to equal 1 serving | Options |
|---------------------|---|---|
| Meat, Poultry, Fish | 1 oz cooked | skinless turkey, ground turkey breast, chicken, 96% lean beef, fish, seafood, shellfish, tunafish in water, veal, venison (no added fat), pork tenderloin, deli-sliced turkey, ham, roast beef |
| Beans/Legumes | ½ cup beans ¼ cup nuts (1 oz) 2 Tbsp nut butter or hummus | rinsed/drained beans, lentils, black eyed peas or edamamme (soybeans) any kind of nut (almonds, peanuts, pistachios, etc) peanut butter/almond butter (“natural” – no added sugar brands), hummus |
| Soy products | ½ cup | Tofu (firm, silken) Veggie burger |
| Egg/egg substitute | ¼ cup 1 egg | Egg Beaters 1 egg, or 2 egg whies |
| Cheese | 1 oz | low-fat (1%) or fat-free cheese |
| Cottage Cheese | ¼ cup | low-fat (1%) or fat-free cottage cheese |
| Ricotta Cheese | ¼ cup | low-fat (1%) or fat-free ricotta cheese |
| Milk | 1 cup (8 oz) | Skim/nonfat/fat-free/0% or lowfat/1% Lactose-free milk (Lactaid) |
| Milk-alternatives | 1 cup (8 oz) | Unsweetened soymilk (8 g pro in 8 oz) Unsweetened almond milk (2 g pro in 8 oz) |
| Yogurt | ¾ cup (6 oz) | Nonfat/fat-free/0% plain or flavored with artificial sweeteners |
| Greek Yogurt | ¾ cup (6 oz) | Nonfat/fat-free/0% PLAIN Greek Yogurt or flavored with artificial sweeteners |





Meal Planning Tips

- Season your foods with herbs, spices, lemon/lime juice, hot sauce and vinegar
- Cook your foods in a low-fat method: bake, broil, grill, steam, BBQ, or George Foreman
- DO NOT fry or add any oils to the pan while cooking (canola oil, olive oil, butter, crisco, bacon drippings or lard)
- Use non-stick cookware and cooking spray like PAM
- These foods are too high in fat and too low in protein and must be avoided for life due to cancer risk: poultry skin, chicken or turkey wings, potted meat like Vienna sausages or SPAM and processed meats like bacon (turkey, beef and pork), sausage, hot dogs, bologna or salami
- Limit nut/nut butters to ¼ cup of nuts or 2 Tbsp of nut butter per day



Produce (Fruits & Vegetables) - Aim for 4 per day

| Types of food | Portion to equal 1 serving | Options |
|--|---|---|
| Cooked Vegetables  | $\frac{1}{2}$ cup cooked | Non-starchy fresh, frozen, or low-sodium canned veggies, including but not limited to: beets, carrots, green beans, spinach, broccoli, greens, zucchini, cabbage, cauliflower, etc. |
| Raw Vegetables Salads | 1 cup raw | Raw veggies including but not limited to: carrots, celery, cucumbers, bell peppers, beets, broccoli, etc. Leafy greens (like spinach or lettuce) |
| Fruits  | $\frac{1}{2}$ cup (4 oz) or 1 small piece, $\frac{1}{2}$ of a banana | Fresh, frozen or canned in water/own juice, including but not limited to: orange, apple, grapefruit, berries, melons, peaches, pears, pineapples, cherries, grapes, banana etc. |



Meal Planning Tips

- Strive to cut out all juice/smoothies (as it is a liquid that you can consume more of)
- The more chewing required, the better the choice!
- If you choose canned fruits, opt for those canned in water or their own juice instead of syrup.
- Soups may be low calorie, but we encourage you to add bulk with protein (like beans/meat in a chili made with veggies)
- If you feel hungry, the veggie group is the best to add at only ~25 calories/serving
- In general, ALL fruits and ALL vegetables are acceptable (just not in syrups, and not cooked with oils, added fats & meat-parts)



Starches – Limit 2 per day



| Types of food | Portion to equal 1 serving | Options |
|--------------------|------------------------------------|--|
| Cereals | ½ cup cooked or dry | Look for cereals with >3 g fiber and no added sugar; oatmeal; cream of wheat; grits |
| Starchy Vegetables | ½ cup cooked | Corn, butternut squash, lima beans, peas |
| Potatoes | ½ cup (4 oz) | White or sweet potatoes (keep skin on), and not in Fried-form! |
| Bread | 1 oz (1 slice) | Whole grain, whole wheat options are best, look for >3 g fiber/slice. Try brands with only 40-45 calories/slice: whole wheat english muffin, bagel thin, sandwich thin |
| Rice, Pasta | 1/3 cup cooked | Choose brown rice and whole wheat pasta for more fiber, more fullness. Note – rice/pasta swell when cooked and may feel uncomfortable even with this small portion |
| “Snack foods” | 1 oz (or portion to = 80 calories) | Popcorn, whole grain crackers, etc. Look for the word “whole” on the label |



Meal Planning Tips

- You likely will not have room in your diet during first month for any starches (as you will be full from the protein and produce)
- As you are farther out from surgery – you will increase your starch servings
- Keep starches high fiber by choosing whole grain, whole wheat, and ‘brown’ versions wherever possible
- For all the ‘snack foods’ – calculate an 80 calorie serving (or about 1 oz on the scale)
- Avoid eating starchy foods all by themselves – be sure to PAIR it with a protein option at all meals and snacks (like cheese or deli meat on crackers)



Fats – Limit 3 per day

| Types of food | Portion to equal 1 serving | Options |
|----------------------------|----------------------------|--|
| Butter, butter substitutes | 1 teaspoon | Lower fat butter substitutes are encouraged |
| Oils | 1 teaspoon | Olive oil, canola oil |
| Mayonnaise, sour cream | 1 teaspoon | Low fat or fat free |
| Salad Dressing | 1 Tablespoon | Low fat or fat free or Light/Lite options have fewer calories per volume *the serving size for most dressings |
| Plant fats | 1 oz | Avocado |



Meal Planning Tips:

- All oils have the same amount of calories and fat per serving
- When choosing salad dressings, look at the serving size carefully (most report 2 Tbsp = 1 serving, and your serving after surgery is 1 Tbsp – so half the amount listed)
- Try using Fat Free Plain Greek Yogurt instead of Mayo/Sour Cream for a creamy texture, no fat, and lots of protein!
- Have olive oil in the house, but use it sparingly
- ALWAYS measure out your fats so you can be sure not to overdo it (the difference between 1 teaspoon and 1 Tablespoon is hard to ‘see’)




Part 5



Vitamins & Minerals for LIFE

Vitamins are FOREVER

98%
of Post-Ops have
at least two nutrient
deficiencies
after 24 months



5 REASONS WHY BARIATRIC SURGERY CREATES NUTRIENT COMPLICATIONS



PRE OP MALNUTRITION

More than half undergoing bariatric surgery already have deficiencies and are malnourished despite an overconsumption of calories.



DECREASE INTAKE

- Tiny post op stomach
- Little or no hunger
- Food intolerances
- Regurgitating



POOR VITAMIN HABITS

You control this one.
"TAKE VITAMINS SO BAD
THINGS DO NOT HAPPEN!"



NUTRIENT MALABSORPTION

With gastric bypass, the segment of intestine where vitamins & minerals enter the body is not hooked up.



INADEQUATE FOLLOW UP

Lack of knowledge, little support, PCP not familiar with symptoms of bariatric deficiency.



Vitamin Deficiencies

IRON

Iron is a common deficiency in more than half of bariatric post ops - constant craving for ice, pallor, dark circles under eyes, brittle nails, fatigue, always cold, weakness, irritability are some of the signs. When ferritin, or stored iron, gets into single digits you will need immediate IV iron infusion or even a blood transfusion. Iron makes up hemoglobin which carries Oxygen.

B12

B12 deficiency is a high percentage early on without clear symptoms- be proactive to avoid neurological damage.

B1 THIAMINE

B1 Thiamine deficiency - A small number of develop Wernicke's encephalopathy, marked by confusion, problems with movement and eye control. The tragedy is that when left untreated, it can cause permanent neurological problems and even death, but if caught early can be completely cured.

CALICIUM & D3

Low D3 intensifies calcium malabsorption, causing bone resorption and eventually osteoporosis. Soft bones, poor immune response, fractures. Bone resorption? The process by which bone is broken down to release calcium into the blood. When the body needs calcium it liquifies your bones to get it.

Not a problem today, but later.

TRACE MINERALS

Copper deficiency must be considered for visual disorders after gastric bypass. Zinc deficiency can be cause of skin rashes, nails 'like paper', smooth swelling of tongue called glossitis and diarrhea.



Multivitamin

Take **2/day** for first **6 months**

- › NO men's formula, NO senior's formula, NO gummies

Should be **chewable** for first month:

- › Centrum Complete Chewable
- › Flintstones Complete Chewable

Tablet OK after 1 month

- › Centrum Complete
- › Women's One-a-Day
- › Alive Women's

Bariatric-Specific Brands Available

- › *Bariatric Fusion **ADEK** Multivitamin Chews (Mandatory for Duodenal Switch)*
- › *Bariatric Fusion Complete Multivitamin Chews (**all-inclusive multi after sleeve/bypass**)*
 - › Multi
 - › B12
 - › Calcium
 - › Vitamin D
 - › ***If having the Duodenal Switch procedure, you MUST taking the Bariatric Fusion ADEK multivitamin regimen***



Vitamin B12

- You need 500 mcg ('micrograms)/day
- Take as a liquid or sublingual (“under the tongue”)
- Alternatively, you can have your primary care physician give you a monthly intramuscular shot of 1000 micrograms.
- NEVER swallow it, because your pouch/sleeve lacks stomach acid, you won't be able to get the B12 out of food or the pill/tablet version.



Calcium

You need **1200-1500 mg** ('milligrams') of calcium daily

- › (NOTE: If having the Duodenal Switch procedure, will need 1800-2400 mg calcium daily)

You should take **500-600 mg** per dose

- › (typically 1-2 pills OR 1 chew), 2-3 times per day (= 2-4 pills/day or 3 chews/day)

Citrate pill option (can take with or without meals)

- › "Citracal Max" 2 pills = ~600 mg = 2 pills, 2 times daily = 1200 mg

Carbonate pill or chew option (MUST take with meals)

- › "Caltrate 600" 1 pill/chew = 600 mg = 1 pill, 2 times daily = 1200 mg

Bariatric Specific Brands Available

- › 500 mg Chewy Bites, Creamy Bites, Soft Chews, Powders, Liquids (can take with or without meals)



Vitamin D3

- You need a total of 3000 IU/day
- You will get about 1000 IU from multivitamin and calcium supplements
- **Take additional 2000 IU/day of vitamin D3**
- Some bariatric-specific “ultra” multivitamins and/or calcium citrate vitamins will meet the daily vitamin D minimum – confirm with your dietitian if you are taking a supplement that meets this need
 - NOTE: If having the Duodenal Switch Procedure, High ADEK multivitamin will meet the daily vitamin D minimum



B Complex & Iron


- Required for **some patients before and/or after weight loss surgery** based on individual lab results
 - › B50 OR B100 Complex
 - › (ONLY if dietitian notifies patient post-labs)
 - › 45-60 mg elemental iron daily – at least 1 daily
 - › “Vitron-C” is a common brand



Nutrition Labs & Follow Up

- Labs are checked at 1st visit with surgeon, 6 mo, 12 mo, 2 yr, and YEARLY for LIFE
- Letters sent in MyChart and in the Mail – READ and FOLLOW INSTRUCTIONS
- Other deficiencies require additional supplements
 - › Iron
 - › Vitamin D
 - › Vitamin B1, vitamin B6, vitamin B12
 - › Copper
 - › Zinc



 **MUSC**
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JULY 10, 2014

The blood work done at your initial visit with MUSC's Bariatric Surgery Program were reviewed. See the guidelines below for vitamins that all bariatric patients should start now, and will take for LIFE. You were found to be deficient in the following: Iron, vitamin B6, vitamin B12, and low vitamin D.

IRON
Your iron levels are low and you need to start taking 65 mg of elemental iron (taken as ferrous fumarate, ferrous sulfate, or ferrous gluconate). Take 3 tablets per day, at separate times.

- Your pharmacist can help you pick out an appropriate supplement but one recommended brand is Vitron-C.

We are also referring you to our benign hematology clinic for an evaluation of how to best manage your iron stores. Their scheduling number is (843) 792-9200.

VITAMIN B6
Your vitamin B6 is low. Start taking a B-100 complex daily with 100 mg vitamin B6.

- B complex is readily available over the counter. One brand we recommend is Nature's Bounty, B-100 Ultra B-Complex.
- Please be sure your multivitamin contains at least 2 mg (100% DV) of B6- NO gummy vitamins.

VITAMIN B12
Your vitamin B12 levels were low. You should start taking double the recommended dosage - please take 1000 micrograms of vitamin B12 per day.

VITAMINS TO START
Please start taking your vitamins. You can find detailed information about this in your book from the nutrition education class. You will start calcium citrate at 1 month post-op.

- A chewable multivitamin with iron 2 times per day, one in the morning and one at night. Please be sure your multivitamin contains iron. NO men's formulas, seniors formulas or gummy vitamins. Flinstone Complete and Centrum Children's Chewable are good options.
- 500 micrograms of sublingual vitamin B12
B12 needs to dissolve on or under your tongue or be taken as a liquid. Alternatively, your primary care provider can give you a monthly shot.

MUSC Bariatric Surgery Team Dietitian, Nina Crowley, PhD, RD, LD, (843) 876-4307
Fax: (843) 876-4199; Website: www.muschealth.com/weightlossurgery



Choosing the RIGHT vitamin for YOU



Behavioral Medicine – Pre-op

Psychosocial factors are an important component of your overall health and the “new you.” That is why we work closely with the behavioral experts in Behavioral Medicine.

While most insurances require you to have a pre-surgical evaluation with a mental health provider, *our team offers a variety of services to support your success both before and after surgery.*



Pre-surgical Evaluation:

- You call them to schedule
- 3-4 hours (interview/testing)
- Caregiving plan (someone to be around after surgery)
- Substance history/use
- Emotional eating, binge eating
- Untreated depression, mood, etc.



Behavioral Medicine Concerns Addressed

- Difficulty integrating healthy lifestyle changes (diet, exercise, vitamins)
- Mood changes
- Social pressures, reactions from others
- Emotional eating
- Stress management
- Weight regain
- Body image concerns
- Struggling with addiction




MUSC Behavioral Medicine Clinic
Call to schedule an appointment: (843) 792-9162



Other Tools & Resources

- Support Group
- Website: Recipes, Tip Sheets, Sample Meal Plans
- Materials in your folder from initial visit
- Monthly Newsletter & Email List
- Facebook Page
- Videos & Virtual Grocery Store Tour
- Cardiac Rehab: medically supervised exercise program



| Procedure | Procedure Image | Mechanism of weight loss | Hospital & Recovery | Unique issues to procedure |
|-----------------------|--|---|---|--|
| Sleeve Gastrectomy |  | <ul style="list-style-type: none"> • Removes "80% of the stomach without bypassing intestines" • Creates a small narrow "sleeve" shaped stomach and keeps pylorus intact • Restricts how much you can eat at one time • Reduces your appetite through favorable changes in gut hormones | <ul style="list-style-type: none"> • Procedure takes about 1 hour • Inpatient stay 1-2 nights • Out of work 2-4 weeks (depending on job) • Return to clinic at 1 month postop to transition to regular texture diet | <ul style="list-style-type: none"> • Preexisting reflux (GERD) might be made worse • Less effective at diabetes resolution than Bypass or Switch • Choice procedure for adolescents, or more complex patients due to no manipulation of small intestine • Option for 2nd stage in the future (Duodenal Switch) • 50-70% Excess weight loss |
| Gastric Bypass |  | <ul style="list-style-type: none"> • Creates a small pouch which is about 85% smaller than the size of your current stomach • Restricts how much you can eat at one time • Bypasses part of small intestine and limits how much is absorbed • Reduces your appetite through favorable changes in gut hormones | <ul style="list-style-type: none"> • Procedure takes about 1-2 hours • Inpatient stay 2 nights • Out of work 2-4 weeks (depending on job) • Return to clinic at 1 month postop to transition to regular texture diet | <ul style="list-style-type: none"> • More effective at diabetes resolution than sleeve • Considered anti-reflux procedure due to ability to resolve GERD • May experience dumping syndrome or reactive hypoglycemia with concentrated sweets • Connection between stomach and intestine puts more at risk for ulcer • 60-75% Excess weight loss |
| Duodenal Switch |  | <ul style="list-style-type: none"> • Creates a "sleeve" shaped stomach first • Restricts how much you can eat at one time • Creates malabsorption by bypassing large part of small intestine after pylorus • Reduces your appetite through favorable changes in gut hormones | <ul style="list-style-type: none"> • Procedure takes about 2-3 hours • Inpatient stay 2-3 nights • Out of work 2-4 weeks (depending on job) • Return to clinic in 1-2 weeks for drain removal • Return to clinic at 1 month postop to transition to regular texture diet | <ul style="list-style-type: none"> • Requires additional attention to fat soluble vitamins (ADEK) • Complex surgical procedure – experienced surgeons only • Protein and fat malabsorption occurs by nature of procedure • Diarrhea, malodorous bowel movements/gas normal • 70-80% Excess weight loss |

