Bariatric Surgery Education

What You Need to Know About Weight Loss Surgery



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Mission Statement:

My New Beginning, the bariatric program at Baylor Scott & White Medical Center – White Rock, is committed to relieving the suffering resulting from clinically-severe obesity by providing multidisciplinary bariatric care.

Our goal is to improve health by achieving weight loss that reduces life threatening risk factors, improves self-esteem, and enhances all aspects of daily living.

We are pleased that you have chosen to participate in Baylor Scott & White – White Rock's long-term, weight loss surgical program. Your input, motivation and participation are required for your program to be successful. Your commitment to long-term follow-up, including support group attendance, is essential for your success. We will partner with you to help you achieve your goals of long-term weight loss and maintaining your new life!

This Handbook

The purpose of this handbook is to educate you about our program. The information is designed to help minimize your stress through understanding. This handbook is for educational purposes only, it is not meant to replace your physician's orders.

What is Obesity?

Obesity is no longer considered a cosmetic issue that is caused by overeating and a lack of self-control. The World Health Organization (W.H.O.), along with National and International medical and scientific societies, now recognize obesity as a chronic progressive *disease* resulting from multiple environmental and genetic factors.

The disease of obesity is extremely costly not only in terms of economics, but also in terms of individual and societal health, longevity, and psychological well-being. Due to its progressive nature, obesity requires life-long treatment and control.

An epidemic in the United States, morbid obesity, or clinically severe obesity, is a serious disease. This medical condition can often be misunderstood and mistreated. As a result of popular misconceptions, obese people often endure ridicule, discrimination and misunderstanding.

Here are some obesity related facts:

- Worldwide, at least 2.8 million people die each year as a result of being overweight or obese.
- △ In all regions worldwide, women were more likely to be obese than men.
- A total of more than half a billion adults are obese.
- ▲ Between 1980 and 2008, the prevalence of obesity nearly doubled.

Studies suggest that bariatric surgery may lower death rates for patients with severe obesity.

Obesity is a complex disease characterized by storage of excessive body fat. There are several factors that play a role in the development of obesity. Evidence proves that genetic, biochemical and physiological factors contribute to obesity. Certain biological factors such as environmental, cultural, socioeconomic and psychological issues also contribute to the development of obesity.

Genetic factors play a role in the development of this disease. Many obese people do not need to consume as many calories to maintain weight as non-obese people. Obese patients usually have other associated conditions called co-morbidities. These conditions include but are not limited to:

- A Hypertension
- ▲ Diabetes
- Elevated cholesterol/triglycerides
- Respiratory disease-sleep apnea
- Shortness of breath with exertion
- Heartburn (reflux disease)
- Degenerative arthritis
- ▲ Depression
- Increased risk for cancer
- Premature death

There are also **non-hereditary factors** that contribute to obesity. These factors include:

- Calories consumed food and beverages
- Calories burned burned by body through normal activities and exercise
- Amounts of fat, carbohydrates, and protein in diet
- Frequency and duration of physical activity

People who are at least 100 pounds above their ideal body weight not only suffer from medical health risks, but they often suffer from psychological aspects of the disease.

There are solutions to the obesity epidemic. Baylor Scott & White – White Rock offers effective surgical options for the treatment of morbidly obese people.

Do I qualify for bariatric surgery?

Your bariatric surgeon will discuss whether or not you are a good candidate for surgery. Common selection criteria for bariatric surgical treatment programs include:

- △ 100 pounds over ideal body weight
- △ Body Mass Index (BMI) of 40 or more
- ▲ BMI of 35-39 with serious co-morbidities

Bariatric Surgery is not a "miracle cure" for morbid obesity. It is simply one part of the *My New Beginning* Bariatric Program. Successful weight loss after undergoing bariatric surgery depends upon your participation as a patient. The most important factor in your program is realizing that your commitment and dedication must be **life-long**. The key to your success is your personal dedication to the lifestyle changes in eating and exercise habits. Successful treatment will include calorie restriction, calorie reduction, and changes in the amounts of fat, carbohydrates and proteins that you consume. Exercise and long-term follow-up are also essential portions of this weight loss program. We want you to be successful in reaching and maintaining your weight loss goal. We are here to help.

Now that you've made the decision to have bariatric surgery, you will want to explore some common weight loss surgery options offered at Baylor Scott & White Medical Center – White Rock.

Bariatric Surgery Options:

1. Adjustable Gastric Banding (AGB or Lap-Band®)

Potential Advantages:

- Low mortality rate
- Minimally-invasive surgery
- ▲ Body parts remain intact no cutting or stapling
- ▲ Adjustable
- ▲ Reversible
- ▲ Low complication rate
- ▲ Low malnutrition risk

Potential Disadvantages:

- A Regular follow-up for band adjustments
- A Requires strict dietary compliance for success
- Band or stomach slippage
- ▲ Band erosion
- ▲ Port leakage may require additional surgery
- ▲ Infection at port site
- ▲ Device malfunction

2. Roux-en-Y Gastric Bypass (RYGB or Gastric Bypass)

Potential Advantages:

- Rapid weight loss
- Minimally-invasive approach or open abdominal incision options
- Higher weight loss than with other methods, except BPD (Biliary Pancreatic Diversion)
- Long, successful results in the U.S.
- A Patients have improved or resolved co-morbidities

Potential Disadvantages:

- Cutting and stapling of bowel and stomach
- △ Part of digestive tract bypassed can lead to malabsorption
- A Lifelong monitoring (blood work) for nutritional deficiencies
- ▲ Must take vitamins and mineral supplements for life

- ▲ Dumping Syndrome can occur
- ▲ Difficult to reverse
- Higher mortality and complication rates than with VBG (Vertical banded Gastroplasty) and Band

3. Sleeve Gastrectomy (Laparoscopic Sleeve Gastrectomy if Laparoscopic)

Potential Advantages:

- Restricts the amount of food the stomach can hold
- ▲ Induces rapid and significant weight loss that comparative studies find similar to that of the Roux-en-Y gastric bypass. For example: weight loss of >50% for 3-5+ year data, and weight loss comparable to that of the bypass with maintenance of >50%
- Requires no foreign objects (AGB), and no bypass or re-routing of the food stream (RYGB)
- Involves a relatively short hospital stay of approximately 2 days
- Causes favorable changes in gut hormones that suppress hunger, reduce appetite and improve satiety

Potential Disadvantages:

- A Has the potential for long-term vitamin deficiencies
- Has a higher early complication rate than the AGB

4. Biliopancreatic Diversion with Duodenal Switch (BPD/DS)

Potential Advantages:

- A Results in greater weight loss than RYGB, LSG, or AGB
- Allows patients to eventually eat more average meals
- A Reduces the absorption of fat by 70% or more
- Causes favorable changes in gut hormones to reduce appetite and improve satiety
- A Is the most effective against diabetes, as compared to RYGB, LSG, and AGB

Potential Disadvantages:

- Requires a longer hospital stay than the AGB or LSG
- A Has higher complication rates and risk of mortality than the AGB, LSG, and RYGB
- A Has a greater potential to cause protein deficiencies and long-term deficiencies in a number of vitamin and minerals such as iron, calcium, zinc and fat-soluble vitamins such as vitamin D

A Compliance with follow-up visits and strict adherence to dietary and vitamin supplementation guidelines are critical for avoiding serious complications from protein and vitamin deficiencies

For more information visit: http://asmbs.org/patients/bariatric-surgery-procedures.

Weight loss surgery is generally designed for those with a body mass index (BMI) equal to or greater than 40, or equal to or greater than 35 with serious co-morbidities. Laparoscopic adjustable gastric banding with the Lap Band® is also FDA-approved for weight loss surgery in people with a BMI of 30 to 35 who have at least one obesity-related condition. Weight loss surgery is considered safe, but like many types of surgery, it does have risks. Consult with your physician about the risks and benefits of weight loss surgery.

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Your Obligations as a Bariatric Patient

To ensure you reach your weight loss goals and achieve the success that you desire in the *My New Beginning* program, it is important that you understand your responsibilities.

The following are the obligations that you are accepting as a part of the bariatric program:

- △ I will be sure to get necessary pre-op work done before surgery
- ▲ I will see my surgeon for follow-up visits after surgery
- △ I will visit my bariatric coordinator for follow-up visits after surgery, as needed
- ▲ I will contact my bariatric coordinator if I have any other procedures, tests, ER visits, hospital stays or surgeries
- ▲ I understand I must take my vitamin and mineral supplements for the rest of my life
- ▲ I understand I must take Vitamin B12. Vitamin B12 may be taken by nasal spray, sublingually, or injection per the instructions of your physician or nurse coordinator.
- A I know I must follow the prescribed diet for the rest of my life
- △ I will attend a support group after surgery to help me achieve my goals
- ▲ I know that weight loss will be more easily attained if I add a modest exercise routine to my life

Preparing for Your Bariatric Surgery

Preparation for your surgery will involve several important steps to ensure proper preparation and optimal outcome of your bariatric surgery including:

- ▲ Initial medical consultation find out if you are a good candidate for bariatric surgery, get information about different kinds of surgery, ask questions of your physician
- ▲ Medical clearance fitness exam to be cleared for surgery including: physical examination, EKG, chest X-ray, blood work, gallbladder ultrasound, EGD and pulmonary function tests
- ♠ Psychological screening evaluates any issues that would compromise your chances for a successful recovery and for achieving long-term weight loss, as well as to determine if you have adequate support after your bariatric surgery
- Nutritional consultation with a registered dietitian
 - nutritional information and guidelines for eating before and after bariatric surgery
 - information on new, healthy eating habits and how to make good food choices
 - information on the different stages of post-op diet progression
 - guidelines for taking vitamin and mineral supplements daily for the rest of your life after bariatric surgery
- ▲ Support group all bariatric patients need to attend at least one support group meeting before surgery to meet other patients of bariatric surgery and to have your questions answered, and to attend support group meetings after surgery to help you achieve your weight loss goals

Checklist for My New Beginning Program

Before Surgery

Before you have your gastric bypass surgery, there are a few things you need to do. This list will make your admission to the hospital a smooth and easy process.

- ▲ 10 days before surgery stop taking any aspirin or NASAIDS which can cause an increase in blood loss during surgery and check with your surgeon if you are taking any nutritional supplements or herbal remedies. Let your doctor know if you are taking blood thinner such as Warfarin® (Coumadin®) or other blood thinners.
- ♣ 7-10 days before surgery begin your pre op liquid diet. This is based on your surgeon's recommendations but generally is low calorie, low fat and low carbohydrate.
- ↑ 7 days before surgery have pre-op testing done. It is your responsibility to schedule and complete the tests. Tests include: EKG, chest X-rays if applicable, labs blood work and pregnancy test, if applicable.
- ♣ 7 days before surgery go grocery shopping and get items listed on the "Shopping List before Surgery" on pages 13-14, including adult chewable vitamins and protein powder supplements. Start taking vitamins.
- ▲ 1 day before surgery start your clear liquid diet (liquids you can see through) such as: sugar free Popsicles®, chicken broth, crystal light etc.
- ▲ The night before surgery do not eat or drink anything after midnight the night before surgery. (No gum, no mints, no water, no coffee, etc.)
- ▲ The morning of surgery take medications only if instructed to do so by your surgeon, otherwise no eating, drinking or swallowing water when brushing teeth.

Day of Surgery

- Arrive at the hospital two hours before your surgery is scheduled, unless told otherwise by the hospital staff.
- A Bring: any pertinent papers that the surgeon's office gave you, your driver's license, insurance card and list of current medications, lip balm.
- ▲ Do not bring any valuables to the hospital including your wallet or purse. Do not wear any jewelry, watches, rings or contact lenses.
- A Wear comfortable clothes to the hospital (clothes that won't rub your incision) if you plan on wearing these clothes home after you are discharged.
- The nurse will start an IV and if you are a diabetic, your blood sugar will be checked.
- ▲ You will receive medications and anesthesia that have been ordered by your surgeon.
- ▲ If you have taken any medications that morning before coming to the hospital, please tell the nurse.
- ▲ In the pre-op holding area, you will meet the operating room personnel that will be caring for you.
- Your family members will be asked to wait in the Surgical Waiting Room.
- ▲ In the operating room, the nurse will put sequential stockings on your feet to keep pressure on your legs before, during and after the operation. The stockings reduce the chance of blood clots developing in your legs. You will wear them all the time, except when you are walking.
- △ During surgery, you may have a catheter inserted into your bladder to monitor your urine output.
- At the end of your operation, your surgeon may put a drain in your abdominal wall, attached to a small suction reservoir. This drain will be removed before you go home.

After Your Surgery

- ▲ You will be transported to the Post Anesthesia Care Unit (PACU), formerly known as Recovery Room. The PACU staff will monitor your vital signs and respiratory status. When you are stable, they will transfer you to the nursing unit.
- All bariatric patients are placed on 2 South. The nurses working on this unit are trained in caring for bariatric patients.
- ▲ Upon arrival to 2 South, your nurse and other personnel will check your vital signs, incision, respiratory status, pain control, etc. If you have family or friends present, they may be asked to step out of the room briefly, so the nurse can assess you properly.
- ▲ You may have a Pain Control Analgesia (PCA) Pump, or Q-pump, that provides you with pain medication. You will be shown how to use the pain pump. Most patients do not have a lot of pain; rather, they say that they are sore. Please let the nurse know if you are having pain.
- After your surgery, you will not be given anything by mouth. You will be allowed ice chips and water. Please bring lip balm to put on your lips since they will be dry after surgery.
- ▲ If you tolerate the ice chips well, you will be started on clear liquids the next day. It is very important that you frequently sip water throughout the day, after starting clear liquids. You will be instructed to drink 5 oz. of fluids per hour.
- A You will be asked to get up and walk shortly after arriving to the nursing unit. Our goal is to have you up and walking within four hours of your arrival to the floor. You will have assistance getting up the first time. We need you to walk as much as possible after surgery. Walking is for your benefit. You will probably experience gas after your surgery and walking is a great way to relieve the discomfort you have from gas.
- You will be asked to use your incentive spirometer every hour during your hospital stay, or as instructed. This special piece of equipment helps you take deep breaths and helps reduce your chance of developing pneumonia or other respiratory problems. You may also receive respiratory treatments to help prevent respiratory problems.
- ▲ You will receive Heparin® or Lovenox® injections in your abdomen after surgery. This medication will help reduce the chances of you developing blood clots in

- your legs. This medication will be used in conjunction with the sequential stockings.
- You will see a white dry erase board on the wall on your room. The staff caring for you will put their names on the board. The best way to contact your nurse will be the nurse call light. A unit clerk will answer your call light via an intercom and ask how he or she can help you. The unit clerk will then alert your nurse as to your need. If you have any concerns, please feel free to contact the Bariatric Coordinator at (214) 324-6127.
- A Most patients are ready and want to go home on the second day after surgery. In order to go home, you must be able to tolerate drinking fluids, tolerate walking, and able to urinate. The nurse will provide you with discharge instructions before you leave the hospital.
- ▲ If you have any questions or concerns during your hospital stay, please feel free to call the Bariatric Coordinator at 214.324.6127.

Shopping List Before Surgery

Clear Liquids:

- Sugar-free Popsicles®
- Sugar-free sorbet
- Decaffeinated coffee or tea
- Crystal Light®
- Sugar-free Kool-Aid®
- Chicken, beef and vegetable broth

Full Liquids:

- △ Sugar-free, low-fat yogurt smooth only, no chunks of fruit, granola or add-ins
- Instant mashed potatoes
- Non-fat dry powder milk
- △ Skim or 1% milk (or Lactaid® milk if lactose intolerant)
- ▲ Sugar-free pudding

Supplements:

- Whey protein powder (No added sugar)
- ▲ Liquid low-carb protein supplements like: Atkins Shake®, Premiere Protein®, AdvantEdge Carb Control®. All of these supplements are available at most discount, drug and grocery stores.
- ▲ Stage 2 baby foods easier to use than a blender. Right size portion during pureed and soft food phases.
- Multivitamins/calcium supplements adult chewable or liquids (check with your doctor)

REMEMBER: Slim-Fast®, Boost®, Glucerna®, and Ensure® are NOT good choices because they contain high amounts of sugar and carbohydrates.

Good Habits to Develop Before Surgery

- ▲ Take your adult chewable vitamins twice a day one at breakfast, one at dinner.
- Decrease your portion sizes at meals.
- ▲ Eat the protein portion of your meal first.
- ♦ When eating, practice taking small bites and chew food well before swallowing.
- Practice eating slowly.
- Start exercising every day. Walking for 30 minutes a day is great exercise.
- Avoid sugar and sweets such as desserts. Choose fresh fruit for dessert.
- Avoid fried foods.
- Start weaning yourself off caffeine, carbonated beverages (yes, even diet soda) and alcohol.
- Avoid eating fast food.
- Avoid "pigging out" before surgery.
- ▲ Eat 5 or 6 small meals a day.

Herbal Supplements and Your Upcoming Surgery

If you are currently taking herbal supplements, it is possible that they might not mix with surgery. Therefore, it is very important that you tell your surgeon as soon as possible about any herbal supplements you are taking. You need to stop taking herbal supplements at least **three weeks** before surgery. Here are some very common herbal supplements and how they can adversely affect your surgery:

Herbal Supplement:	Possible Complications:
Echinacea	Interferes with immune system
Ephedra	Abnormal heartbeat, high blood pressure
Feverfew	Bleeding
Garlic	Bleeding
Ginkgo	Bleeding
Ginseng	Bleeding, fast heartbeat, high blood pressure
Goldenseal	High blood pressure
St. John's Wort	Increase or decrease effects of surgery drugs

Be cautious in taking herbal supplements if you are taking medication for:

- ▲ Blood pressure
- Blood thinners
- Diabetic medications
- Drugs that affect the liver
- ▲ Heart medications
- Monoamine oxidase inhibitors (MAOIs)

Please check with your doctor before restarting your herbal supplements after surgery.

Source: www.mayoclinic.com/print/herbal-supplements

Bariatric Post-Op Diet Progression

Unless otherwise prescribed by your surgeon, your diet after surgery will progress as follows:

Days 1 - 2: clear liquids, at least 32-64 oz. per day. Sip...sip...sip.

Days 3 - 4: may add protein supplements, 3 times daily, between meals and at bedtime. Remember: only small amounts (4-6 oz.), go slowly (take 30 minutes to drink 6 oz.), STOP when you feel full.

Day 7: Start full liquid diet. May add V-8® juice, thin cream soups, sugar-free yogurt, unsweetened applesauce, cream of wheat and sugar free pudding

Days 18-20: slowly add oatmeal, soft boiled and scrambled eggs, cottage cheese and baby foods.

Please carefully follow your surgeon's written progressive diet instructions.

Discharge Home Instructions

No lifting anything that weighs more than 20 pounds for 6 weeks after surgery.

You may take a shower. No tub baths for 1 week.

You may begin to drive 1 - 2 weeks after surgery, as long as you are NOT taking any narcotic pain medication like Lortab®, Vicodin®, Percocet®, etc.

You may walk as a form of exercise as soon as you go home from the hospital. Slowly increase your walking time, distance and pace.

You can start regular housework 1 week after surgery.

Follow your prescribed diet to avoid excess discomfort and uncomfortable symptoms as you heal.

Call your surgeon if you have:

- ★ Fever above 101°
- Persistent nausea & vomiting
- Shortness of breath
- A Redness, drainage, or swelling of incision or puncture site
- Severe pain not relieved by pain medications
- Chest or leg pain
- Heavy coughing

You can return to work as soon as you feel ready to return. Most people wait 5 - 7 days after surgery.

Begin attending support group meetings as soon as you are able.

Call your surgeon's office or bariatric clinic to schedule your first follow-up appointment one week after surgery.

Please follow your physician's written directions for pre-op and post-op diets.

Post-Op Emotions

Emotions

It is very normal to have a variety of emotions and feelings after bariatric surgery. Some patients feel excited, hopeful and cheerful after surgery. Other people feel scared, anxious, depressed or irritable after surgery. Many people wonder if they made the right decision to have bariatric surgery.

Being aware of and understanding your feelings can help you adjust during your post-op recovery period. You may have concerns about healing, getting better and eating. You may even wonder if the surgery is going to work for you.

Remember, these feelings are a normal part of your recovery period after surgery. It will take time for your body to heal and to adjust to new eating patterns. You can do it! We are here to help you succeed.

Support System

Family and friends can be a part of your support system. Those who care about you want you to be happy, healthy and successful. Most family and friends are willing to do whatever it takes to help you reach your goal. Talk to them and let them know what you need. Make sure you talk, express your needs and communicate.

Some suggestions to help you during your recovery period:

- Exercise go for a walk. You do not have to join a gym or run a marathon. Staying active helps you feel better.
- ▲ Talk with family, friends, or other people in your situation. Many of the people you meet at the support group understand how you feel. Other patients are a wonderful source of encouragement.
- Have a positive outlook and keep track of small achievements. Use a diary or notepad and write down your successes including:

Walking without pain or shortness of breath

Seeing your toes or crossing your legs

Fitting into a movie theater or airplane seat

Buying regular clothes

Running and playing with your kids

These are some of the small but meaningful victories you will see after surgery. As you progress, you will develop renewed energy and enthusiasm, so enjoy your new life!

Liquid Diets Explained

1. Clear Liquids – Liquids you can see through:

- ▲ Beef broth
- ▲ Chicken broth
- ▲ Sugar-free Popsicles®
- △ Gatorade® (G2 only—no sugar)
- ▲ Propel® water
- Sugar-free Crystal Light®

- ▲ Iced tea no added sugar except Nutrasweet® / Splenda®
- △ Decaffeinated hot tea, coffee no added sugar, no added cream or milk

Clear Liquids Guidelines:

- You must be able to see through the liquid
- △ 64 oz. per day
- Water is good
- ▲ Sip, sip, and sip!
- ▲ No added sugar
- ▲ No cream / milk
- No straws
- No carbonated drinks
- No juice

TIP: Take a large plastic, ice water-filled, travel mug with you everywhere.

2. Full Liquids – Liquids you cannot see through:

- A Skim milk
- Sugar-free pudding
- △ Sugar-free blended yogurt no fruit pieces or add-ins
- △ Carnation Instant Breakfast® no added sugar
- ♣ Protein shakes no sugar
- Apple sauce − no added sugar
- ▲ Baby foods
- △ Pureed soups must be completely smooth

Full Liquids Guidelines:

- ▲ Eat slowly
- △ 64 oz. per day
- ▲ No straws
- No carbonated beverages
- Avoid caffeine

Tip: Nonfat dry milk or whey protein powder can be added to items listed above to create **high protein** full liquids.

Soft Foods Explained

Examples of Soft Foods:

- ▲ Soft fruit banana, applesauce
- △ Well-cooked veggies. AVOID fibrous foods such as asparagus, celery, corn.
- ▲ Baked fish or tuna
- ▲ Toasted bread, crackers bread must be toasted
- △ Cooked cereals oatmeal, Cream of Wheat®, grits
- ▲ Refried beans low fat
- A Baked turkey, chicken, ham moist not dry, pureed with liquid
- △ Ground beef NO steak, stew meat or pot roast check with surgeon first

Tips: No liquids with meals – drink 30 minutes before or after meals; no ice cream, sweets, junk food or empty calories.

Guidelines for Food Choices

On a Regular Diet:

DAIRY: serving size:

4 to 6 servings per day:

\blacktriangle	Skim, ½%, 1% milk	½ cup
▲	Sugar-free yogurt	½ cup
٨	Low-fat frozen yogurt (sugar-free)	½ cup
▲	Low-fat cottage cheese	½ cup
▲	Low-fat string cheese	1 stick

AVOID - 2% milk, whole milk, cream, sour cream, non-dairy creamer

MEAT: serving size:

4 to 6 oz. daily:

▲	Poultry – skin removed	1 oz.
▲	Fish and shellfish	1 oz.
٨	Tuna fish – packed in water	2 tablespoons
▲	Eggs – limit 1 to 3 per week	1 egg
\blacktriangle	Lean cuts of meat – with all fat removed	1 oz.

AVOID – High fat meats such as ground beef, beef brisket, short ribs, organ meats, bacon, sausage, hot dogs, luncheon meat or peanut butter. Avoid anything fried, gravy and sauces. The majority of bariatric patients are not able to tolerate red meat for several months after surgery.

VEGETABLES: serving size:

3 to 6 servings per day:

♣ Raw leafy greens
½ cup

▲ Fresh or frozen ¼ cup

3 times a week, eat dark green leafy, yellow, or orange veggies for Vitamin A.

AVOID – Veggies made with butter, cream sauces, margarine, regular mayo or salad dressing. Use non-fat, low-fat or lite varieties of mayo, salad dressing, etc.

FRUIT: serving size:

2 to 4 servings daily:

♣ Fresh or frozen fruit
 ♣ Canned fruit packed in water or fruit juice
 ♣ 100% fruit juices
 ¼ cup

AVOID – Fruit packed in heavy syrup or light syrup, fruit pie filling, juices with added sugar. Never eat coconut.

GRAINS: serving size:

4 to 6 servings per day:

▲ Bagel
▲ English muffin
▲ Whole grain bread
½ slice

△ Soda crackers 2 crackers

♣ Rice cake

A Hamburger bun 1/4 bun

▲ Tortilla
♣ Pasta
♣ Cooked or boxed cereal
♣ Rice
♣ Dried beans
½ tortilla
¼ cup
¼ cup
¼ cup

AVOID – Croissants, biscuits, butter rolls, danish, donuts, muffins, coffeecake, pancakes, honey buns, granola, cheese and cream sauces, pasta or rice with butter, regular microwave popcorn.

Protein Requirements After Surgery

After your bariatric surgery, it will be necessary for you to eat more protein. This will help you heal after surgery. A higher protein intake will also help prevent the loss of hair. Protein is essential for wound healing, growth of hair and nails, and the maintenance of muscle mass.

Protein can only be obtained through consuming food and supplements. The best sources of complete proteins are through animal sources such as eggs, cheese, milk and milk products, poultry, fish and other lean meats. Grains and vegetables like beans, do offer some protein, but these are usually incomplete sources and need to be combined to form complete proteins.

Emphasis should be placed on eating high-protein foods. Daily protein intake should be 75-85 grams. Baby food - Stage 2 - contains the appropriate serving size.

Remember:

- ▲ Eat all proteins at the beginning of each meal.
- △ One ounce of protein is the size of a small matchbox. Over time you should be able to eat 2 or 3 ounces of protein two or three times a day.
- Your stomach does not produce enough acid to digest red meat for at least 6 months after surgery. Avoid red meat for at least 6 months after surgery.

Protein content of specific foods:

Food	Amount	Grams of Protein
Scrambled egg substitute	1/2 cup	13
Veggie burger	1	13
Nonfat dry milk	1/2 cup	12
Skim milk or yogurt	8 oz.	9
Soy milk	1/2 cup	8
Carnation Instant Breakfast® sugar-free	e 1 pkg.	7
Egg	1	7
Poultry, fish or pork	1 oz.	7
Tuna - packed in water	1/4 cup	7
Non-fat/low-fat cottage cheese	1/4 cup	7
Cheese, low-fat	1 oz	7
Tofu	1/4 cup	5
Beans, lentils	1/4 cup	3
Most veggies	1/2 cup	2

Tips for Eating After Surgery

- ▲ Eat only three meals a day. NO snacks between meals.
- Eat slowly and take small bites.
- Chew everything well to a pureed consistency.
- Use a cocktail fork, baby spoon or toothpick.
- When you first feel full, stop eating.
- Do not drink fluids with meals. Do not drink 1 hour before eating and wait 1 hour after a meal to drink fluids.
- No eating between meals. Drink water or sugar-free drinks between meals.
- Eat lean protein first during meals.
- Avoid eating fibrous foods and sticky, doughy foods. Can cause an obstruction at the band site.
- ▲ Drink 64 oz. of fluid every day. Good fluid choices are fluids that are low calorie, sugar-free and non-carbonated. Water is a great choice. Carry a large, plastic cup with you to keep track of how much you drink, and sip all day long rather than drinking a lot at one time.
- Do not lie down within one hour of eating meals.
- Add new foods one at a time to assess tolerance.
- ▲ Eat solids only 3 times a day.
- ▲ Take your vitamin/mineral supplements every day.
- ▲ Exercise 30 minutes every day. Walking is a great exercise.
- ▲ Do not chew gum. It can block stoma if accidentally swallowed.

Remember:

- No straws
- No carbonated beverages
- All foods should be low in fat and sugar-free
- △ If hunger is a problem, you probably need more protein.

Portion Control for Weight Loss

Simply reducing the amount of food you eat will usually help you lose weight. And when you add a simple exercise, such as a 30-minute walk, you will likely increase your weight loss. For portion control purposes, let's take a look at what normal size portions really look like.

Meat and Alternatives:	serving size:
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Meat, fish, poultry – baked, grilled, broiled 3 oz. = a deck of cards

Dairy and Cheese: serving size:

Cheese 1 $\frac{1}{2}$ oz. = 4 dice or 2 slices

Sugar-free ice cream $\frac{1}{2}$ cup = $\frac{1}{2}$ a baseball

Grain Products: serving size:

Cereal 1 cup = your fist

Pancake 1 = a compact disc

Bread 1 slice = cassette tape

Cornbread 1 piece = bar of soap

Vegetables and Fruit: serving size:

Salad 1 cup = a baseball

Baked potato 1 = your fist

Fruit 1 medium = ½ baseball

Raisins $\frac{1}{4} \text{ cup} = \text{large egg}$

Fat: serving size:

Margarine or spread 1 tsp. = 1 dice

High Protein Recipes

High Protein Skim Milk

- △ ½ cup skim milk
- ▲ 3 tablespoons nonfat dry milk

Mix together in a shaker cup and shake well until blended.

High Protein Sugar-free Carnation Instant Breakfast

- △ ½ cup skim milk
- ▲ 3 tablespoons nonfat dry milk
- ♣ ½ envelope sugar-free Carnation Instant Breakfast®

Mix together in a blender or shaker cup.

High Protein Sugar-free Hot Cocoa

- △ ½ cup hot skim milk
- ▲ 1 tablespoon sugar-free hot cocoa mix
- ▲ 1 tablespoon nonfat dry milk

Mix together until dissolved.

High Protein Sugar-free Pudding

- △ 2 cups skim milk
- △ One 1.0-1.4 oz. pkg. sugar-free instant pudding
- [★] ½ cup nonfat dry milk

Combine all ingredients, mix per package instructions. Makes four ½ cup servings.

High Protein Yogurt

- sugar-free yogurt
- ▲ 3 tablespoons nonfat dry milk

Mix nonfat dry milk into the sugar-free yogurt to boost protein levels.

High Protein Cooked Cereal

- △ ½ cup skim milk
- [▲] ¼ cup quick oats
- ▲ 1 tablespoon nonfat dry milk

Mix nonfat dry milk with skim milk. Add cereal and microwave for 1-2 minutes. Makes several servings.

High Protein Breakfast Shake

- [★] ½ cup fat-free plain yogurt
- [▲] ¼ cup skim milk
- ≜ ½ small banana
- [▲] ¼ cup nonfat dry milk

Mix all ingredients together in a blender. Makes several servings.

High Protein Mashed Potatoes

- ≜ 2 tablespoons mashed potato mix
- [▲] ½ cup hot skim milk
- 2 tablespoons nonfat dry milk

Mix nonfat dry milk with skim milk and bring to a boil. Add mashed potato mix and mix with wire whisk. Let stand to thicken. May use small amount of fat-free gravy or butter substitute for added flavor.

Tips for Dining Out

- Be familiar with common menu descriptions. Foods that are breaded, fried, creamed, scalloped, and au gratin mean extra calories and fat. Better choices are foods that are baked, poached, roasted, steamed, broiled or stir-fried.
- Ask about serving sizes. Restaurants may not be able to accommodate every request.

 Most restaurants will try to assist in reasonable changes or making choices.

 Request half portions, or better yet, share a full portion with your dining partner.
- Ask about food preparation. Ask if vegetables and meats are cooked with butter, cream or sauces. Always request that sauces or dressings be served on the side or omitted. Use these items sparingly or not at all. Fish or poultry that is grilled, broiled, baked, steamed, or poached are great choices. Ask to have entrée prepared without added fat.
- Ask for items not on the menu. Nonfat or low-fat milk are usually not on the menu, but available upon request. Light, broth-based soups and fresh fruit are often available, even though they are not listed on the menu. Ask for low fat salad dressing, served on the side.
- Skip the bread. It probably will not be tolerated. Other choices to request include soda crackers or Melba® toast.
- Beware of the salad bar. Use caution at the salad bar, especially with salad dressings, toppings, and creamy salads such as macaroni, potato and coleslaw. These can add up to a lot of calories and fat. Use low-fat or lite salad dressing only.

Low-fat appetizers make great meals!

No alcoholic beverages. They are high in calories and can irritate your new stomach.

Remember: Portion Control

Frequently Asked Questions After Surgery

How much food will my stomach hold after surgery?

Once you stomach has healed, your stomach will hold about $\frac{1}{2}$ to 1 cup of food or liquid.

How long will it take my stomach to heal?

It will take about 6 weeks for your stomach to heal after surgery.

Will I stay healthy eating the recommended amounts of calories and food?

You will remain healthy eating the smaller amounts of food and reduced calories that bariatric patients consume after surgery. Friends and family members may be concerned about the small amounts of food, but the program is designed to meet **your** body's needs.

Will bariatric surgery change my eating habits?

After bariatric surgery, you will develop a new, healthy eating pattern. Your new stomach is smaller and you will feel full after eating less food. Meals will be smaller. You will have to chew your food very well and take smaller bites.

Will I be hungry after surgery?

Some people are not hungry after surgery. However, you must achieve your postoperative nutritional goal of 64 oz. fluid every day to prevent dehydration. The next goal you will need to meet is your protein goal. You will need about 60 to70 grams of protein every day.

Is there anything I cannot eat after bariatric surgery?

Food you consume after surgery must be low-fat and sugar-free. Some people have food intolerances after bariatric surgery. If you find that you do not tolerate something in the beginning, try that food item again later. You may be able to tolerate that particular food later on. Many patients find it difficult to tolerate red meat for at least 6 months after surgery. Coconut is a something you should always avoid. You must also avoid fibrous foods such as: celery, asparagus, broccoli stalks, corn and pineapple.

Does the new stomach stretch after surgery?

There is no scientific proof that the new stomach stretches. However, as you heal, it relaxes and thus patients find that they can gradually consume more food at a time. Weight loss will be maintained as long as you **avoid** large amounts high caloric food.

Do I really need to drink 64 oz. of fluid every day?

Yes, you need this much fluid to remain hydrated. There is water in the food we eat. After surgery you are eating smaller amounts of food. As a result, you are not receiving as much water every day as you normally would. Drinking water will also help diminish food cravings.

What happens when I crave high-fat and high-sugar foods?

Craving may be caused by an emotional or hormonal need. It can be very difficult to have restrictions on your diet. Space your meals out evenly during the day to help prevent cravings. Drink more water and/or go take a walk if you are craving food. Distract yourself with activity and you will find cravings will subside.

How do I know I am eating enough food?

You should feel full after eating a small amount of food. Your portion size should be no more than ½ cup to 1 cup of food at each meal. If you feel that you are having problems with food choices, call the Bariatric Coordinator or the Bariatric Dietitian for help.

Can I drink soft drinks after bariatric surgery?

Carbonated beverages will cause gas that is very painful after surgery. It is not recommended that you drink soft drinks after bariatric surgery. If you insist on drinking soft drinks, make sure that the soft drinks are sugar-free (diet).

Can I drink coffee and tea after surgery?

Yes, but caffeinated drinks can cause dehydration. Decaffeinated beverages are a better choice after bariatric surgery. Use only a sugar substitute or low fat creamer in your coffee or tea.

Can I drink alcohol after surgery?

Alcohol will slow down your weight loss. Alcohol contains empty calories, which are of no nutritional value. After your surgery, alcohol will enter your blood stream much quicker. You can become intoxicated much quicker after consuming only a small amount of alcohol. An occasional glass of wine or a cocktail may be ok. Check with your doctor. Beer is carbonated and should be avoided.

Can I smoke after bariatric surgery?

No. Smoking stimulates gastric secretions in your stomach. These gastric secretions are very irritating to your new stomach. Irritation of your new stomach can cause ulcers and chronic gastritis.

Will I lose my hair after surgery?

Hair loss may be a result of having several life-altering events occurring at the same time. You just had major surgery, changes in your eating habits and rapid weight loss. Some patients will have hair loss about 3 to 5 months after surgery. Hair loss is temporary and your hair will grow back. Take your vitamins and keep your protein levels up to lessen the chance and amount of hair loss.

Will my weight loss reach a plateau?

You will eventually reach a plateau after surgery. You may notice that you are not losing pounds or inches. Review your food choices and activity levels. Consult with the Bariatric Dietitian or Bariatric Coordinator for solutions.

Life After Your Bariatric Surgery

Now that you're surgery is over, you are ready to get started on your new beginning in life. As your body adjusts to the surgery, you may experience a variety of uncomfortable symptoms which should be temporary.

There are some things you can do to help your body adjust more easily. The guidelines below are helpful and should be carefully followed to increase your comfort level.

Possible Symptoms Following Bariatric Surgery

Nausea and Vomiting:

One cause of nausea and vomiting is not following the dietary guidelines after gastric surgery. It is very important to follow the recommendations for eating to avoid vomiting. Repeated vomiting can cause stress on your new stomach and can cause staple lines to rupture.

If you experience nausea and vomiting, ask yourself the following questions:

- How long did it take me to eat? Did I eat slowly?
- Did I drink fluids with my meal or too soon before/after my meal?
- Did I eat more than I should have? How big was the portion?
- Did I chew my solid foods until they resembled pureed food?
- Did I lie down too soon after eating?
- Did I eat hard-to-digest food like tough meat or fresh bread?
- Did I eat foods that I am not supposed to eat yet? Am I eating foods from the next menu stage?

If vomiting persists throughout the day, **do not** eat solid foods. Sip on clear liquids. If vomiting continues for 24 hours, call your surgeon.

Constipation:

After surgery, you may experience constipation. The amount of food you eat now is very small compared to before surgery. As a result, bowel movements may be decreased. Some people state that they only have a bowel movement every 2 or 3 days.

If your stools are hard, drink more fluids between meals. You must drink at least 48 oz. of fluid per day, but preferably 64 oz. of fluid every day.

Later, when appropriate, your doctor may want you to eat foods with more fiber. Do not eat foods with more fiber without checking with your doctor. Do not take stool softeners or laxatives without checking with your doctor.

Diarrhea:

Immediately after surgery, you may experience some diarrhea. Diarrhea should only be temporary. If diarrhea persists and you are not able to maintain hydration, call your doctor.

Gas:

Sometimes after surgery you can experience gas. It can be very uncomfortable. Here are a few recommendations to reduce formation of gas:

- Do not use straws
- Sip slowly
- Do not drink carbonated beverages
- Dilute fruit juice with water 50% juice and 50% water
- Use Lactaid® when eating dairy products
- Avoid gas-forming foods like broccoli, beans, brussel sprouts, and onions

Hair Loss:

Hair loss can occur after weight loss surgery, especially in patients who lose weight rapidly in a short period of time. There is no way to predict who will suffer from hair loss. Hair loss and thinning is your body's reaction to stress. Losing weight creates minor stress for the body and your body redirects its energy to more important functions. Over time, your body will adjust and hair loss will stop.

The hair loss will most likely only be noticeable to you and not others. You will notice more hair in your comb or brush. You may even notice more hair in the tub after a shower or washing your hair. Actually, you hair is thinning and you will not become noticeably bald.

A high protein diet and vitamin supplements will reduce or delay hair loss. If you have continued hair loss, it is a sign that you are not eating enough protein or it is not being absorbed. Remember the rule: eat protein first.

Possible Complications of Bariatric Surgery

As with any surgery, there are always risks and complications associated with the surgery and co-morbid conditions. Potential risks are about the same as any other obese person having surgery. The degree of risk depends upon your BMI and co-morbid conditions. Obesity and co-morbid conditions can increase risks and complication rates of both anesthesia and the surgical procedure. Risks and complications fall into two categories: early and late. Depending upon which bariatric procedure you have chosen, the risks and complications will differ. A list of general risks and complications will be presented first. Risks and complications specific to each bariatric procedure performed at Baylor Scott & White Medical Center – White Rock will follow.

Potential Early Complications:

- ▲ Bleeding *
- ▲ Infection
- Poor wound healing
- ▲ Deep vein thrombosis
- △ Cardiac episodes myocardial infarction, heart failure, arrhythmia, stroke
- △ Pulmonary problems pneumonia, aspiration, atelectasis, pulmonary embolism
- ▲ Injury to intra-abdominal organs and/or blood vessels *
- ▲ Spleen injury *
- ∆ Death

Potential Late Complications of the Band:

- ▲ Port site pain
- ▲ Port leakage *
- Band or stomach slippage *
- Band disruption *
- ▲ Band erosion *
- △ Obstruction *

- ▲ Gallstone formation *
- ▲ Device failure *

Potential Late Complications of RYDGB (Roux-en-Y Gastric Bypass)

- Ulcers
- Staple line breakdown *
- ▲ Incisional hernia *
- ▲ Gallstone formation *
- ▲ Adhesions *
- ▲ Bowel obstruction *
- ▲ Dehiscence *
- ▲ Leaks *

An anastomotic leak, though rare, is serious and usually indicates a need to return to the operating room immediately. When a re-operation for a leak is performed, you will have additional drains placed. You will also have a feeding tube inserted into your bypassed portion of your stomach and you will receive nutrition through the feeding tube until the leak heals. After the leak heals, your feeding tube will be removed in the surgeon's office.

* Indicates: may require additional surgery

Ten Commandments of Bariatric Surgery Patients

- 1. All excuses about exercise stop in the lobby.
- 2. You can regain the weight.
- 3. This is a lifelong change in food choices, eating and exercise.
- 4. Take your vitamin/mineral supplements daily.
- 5. You need to eat!

- 6. You need to drink water!
- 7. You might not have a BM every day.
- 8. You have to exercise. Walking is the best exercise.
- 9. Follow-up is mandatory.
- 10. Call the Bariatric Clinic for questions, problems, or just let us know how you are doing

Helpful Hints for Ongoing Weight Loss

Work on changing your eating behaviors. Focus on making good food choices. Good food choices are food choices that are low calorie, low-fat and sugar-free. Lean meats, fresh fruits and veggies are good choices.

If you start eating the way you did before your surgery, you will be back to your presurgery weight.

Tips to help keep your weight off:

Once you are at your goal weight and eating regular food, you can stop the liquid protein supplements. If you are drinking the protein supplements as a meal replacement, you may continue to drink the supplements.

Broil, bake, grill, boil and steam prepare foods to reduce calories. Do not fry foods.

Avoid high-calorie foods such as, gravy, sauces, jelly, jam, honey, sugar, ice cream, butter, margarine, etc. Sugar-free versions of these items can still be very high in calories.

Keep a diet journal. This will help you see what you are eating every day. The journal is also helpful if you are having problems such as excessive gas or diarrhea. Keeping a diet diary or journal will show a pattern of problem foods. You can eliminate the problem foods and work to cure the physical problems.

Exercise! Exercise is very important for weight loss and ongoing maintenance. If you reach a weight loss plateau, look at what exercise you are doing. You might have to increase the time you spend exercising or change your method of exercise. You might have to incorporate weights into your exercise routine.

Increase your fluid intake to compensate for fluid loss during exercise.

Are You an Emotional Eater?

Take This Quiz to Find Out

After your bariatric surgery, your physician will give you careful dietary guidelines to follow. It will be important for you to follow your guidelines to maintain an adequate amount of nutrients and vitamins and to avoid uncomfortable symptoms.

In addition to restructuring your eating habits, it can be helpful to examine the emotional aspect that is often related to unhealthy eating choices.

People who are influenced by their feelings to eat unhealthy foods and drinks are called "emotional eaters". Emotional eaters tend to overeat when experiencing a strong emotion such as depression, anger or even fear. Emotional eaters overeat as soon as they get home from work or school. An emotional eater eats out of boredom. Emotional eaters sometimes feel like they are starving. Typically, emotional eaters have a very hard time showing or talking about their feelings.

Emotional vs. Physical Hunger

<u>Emotional</u> <u>Physical</u>

Sudden – one minute OK, next starving Gradual, stomach growls

Crave specific food Will eat anything to satisfy hunger

Based in mouth and mind Based in your stomach

Urgent – must eat NOW! Patient – can wait to eat

Triggered by upsetting event Trigger - hours since last ate

Absent-minded eating – unsure what and how much eaten Aware of what and amount eaten.

Keep eating even when full and becomes painful

Stops eating when feels full

Guilt about eating - promises not to do it again Eats based on need to eat

If you are an emotional eater, you're not alone. Your dietitian at My New Beginnings is ready to help you plot a new course to establish eating habits based on physical need rather than emotion.

Vitamin and Mineral Supplements

Now that your new stomach is smaller, you will not be able to consume enough food to obtain all the vitamins and minerals necessary to stay healthy. You will need to take vitamin and mineral supplements for the rest of your new life. It is essential that you take vitamin and mineral supplements daily to prevent nutritional deficiencies that can cause health problems.

Obvious signs of mineral and vitamin deficiencies are:

- A General weakness
- Hair loss
- Muscle wasting
- Confusion

Multivitamin & Mineral Supplement Guidelines:

- Begin the day you go home from the hospital
- Chewable or liquid multivitamin
- Chewable Iron (unless it is in your MVI)
- A Chewable Calcium Citrate

Calcium Guidelines:

- Start taking calcium two months after surgery
- △ 1000-1500 mg every day
- Calcium Citrate is the best absorbed form of calcium. Tums® are NOT a good source of calcium
- ▲ DO NOT take calcium and iron together they compete for absorption

Vitamin B-12

- △ Start taking B12 one month after your surgery
- △ Take 1000 mcg once a day

▲ MUST BE TAKEN in the form of nasal spray, sublingual (under the tongue) or injection. B12 is no longer absorbed by the digestive tract and must be taken by these alternative routes

Iron

- △ Must be receiving 18 mg per day from chewable multi-vitamin or separate tablet
- A Menstruating women and those at high risk for anemia need 60 mg per day
- If taking additional iron, avoid taking iron with calcium, milk, coffee, or tea
- Better absorbed when taken with Vitamin C

Thiamine

Deficiency can occur as soon as 1 month after surgery if not taking a multivitamin

Vitamin B12

Vitamin B12 helps maintain healthy nerve and red blood cells. Vitamin B12 is *bound to protein in food*. Hydrochloric acid in the stomach releases B12 from the proteins in food during digestion. Once released, vitamin B12 mixes with a substance called intrinsic factor, which makes vitamin B12 absorbable by the intestinal tract.

Gastric Bypass Surgery affects intrinsic factor production and absorption, thus making you deficient in Vitamin B12. You are essentially **unable to absorb** oral sources of Vitamin B12, whether in food or vitamins.

You need to take vitamin B12 for the <u>rest of your life</u> in one of the following forms:

- Nasal spray = 500 micrograms (mcg) weekly
- Sublingual (under your tongue) = 1,000 mcg daily
- △ Injection = 1,000 mcg monthly

Other causes of Vitamin B12 deficiency include:

- Low dietary intake usually strict vegetarians due to avoiding all meat, fish,
 & dairy products
- ▲ Chronic alcoholism

- Crohn's disease
- Intestinal malabsorptive disorders
- ▲ Fish tapeworm
- ♠ Pernicious anemia caused by a lack of intrinsic factor

Signs and Symptoms of Vitamin B12 Deficiency:

- ▲ Loss of appetite
- Diarrhea / Urinary Incontinence
- Numbness or tingling of hands and toes
- ▲ Paleness
- ▲ Shortness of breath
- Fatigue / Weakness
- Shaky movements
- Unsteady gait / poor balance / muscle spasms
- Sore mouth and tongue
- △ Confusion or change in mental status / difficulty thinking / poor concentration

Warning! Signs and symptoms related to the central nervous system may be irreversible if treatment in not started within 6 months of the first symptoms.

Vitamin B1 (Thiamine)

Vitamin B1 or thiamine is necessary for the metabolism of carbohydrates. Thiamine also plays a role in normal nerve and heart function. Thiamine or B1 is a water-soluble vitamin with little, if any, stored in the body. The lack of vitamin B1 storage means depletion can occur within 14 days. Thiamine deficiency is also called beriberi and chronic, severe thiamine deficiency can lead to serious complications, even death.

There are 3 sub-types of beriberi; dry, wet, and cerebral. Signs and symptoms of each include:

Dry beriberi:

- ♣ Pins and needles sensation in toes
- Burning sensation in feet, worse at night
- Leg pain and weakness
- Muscle wasting in legs

Wet beriberi:

- ▲ Fast heart rate
- A High output of blood from the heart, leading to heart failure = swelling of legs
- Dilation of blood vessels causing warm, moist skin

Cerebral beriberi:

- A Korsakoff's psychosis = apathy (lack of interest), confusion, severe memory problems, amnesia. Usually occurs first.
- ♠ Wernicke's encephalopathy = abnormal eye movements, standing / walking problems, and poor mental function. Usually occurs second.
- Wernicke-Korsakoff syndrome = development of symptoms of both cerebral beriberi conditions.

Note: Wernicke-Korsakoff syndrome recovery may be incomplete since some of the brain damage may be permanent.

WARNING! If Wernicke's encephalopathy is not promptly treated, symptoms may get worse, resulting in coma and death. This is a medical emergency!

Zinc

All About Zinc and Zinc Deficiency

After your bariatric surgery, it is important for you to understand the vitamins and minerals that your body needs to remain healthy. Vitamin/mineral supplements will be a

necessary addition to your diet. Among the most important mineral supplements that you will need is zinc.

What does zinc do?

Zinc is a mineral in your body that is involved in hundreds of chemical reactions in the human body. Zinc is important for immune function, acid-base balance, digestion, growth and development, skin and hair health, genetic transcription, antioxidant activity and much more.

What happens if I don't get enough zinc?

Because zinc affects so many systems in the body, there is no single distinct symptom of zinc deficiency.

Some of the more common symptoms include:

- Loss or diminished smell and taste
- Poor wound healing
- A Roughening of skins/rashes
- Low libido (men)
- Canker sores
- Lethargy
- Deformed nails
- △ Infections especially skin, respiratory, GI and urinary
- Metallic taste in mouth
- Lip fissures, cracked/ peeling lips
- Anorexia, loss of appetite
- Prostate problems (men)
- ▲ Irregular menses (women)

Advanced stages of zinc deficiency includes:

- Serious immune problems
- Severe diarrhea
- Severe hair loss (even total)
- Loss of night vision
- Significant rash around the mouth and genitals

Where can I get zinc?

Zinc is found in a wide variety of foods. Some of the best sources include:

- Shellfish and other seafood
- Meat
- Dairy products
- ▲ Legumes (beans, peas, and lentils)
- Nuts and seeds
- Most multivitamins and a wide variety of dietary supplements

Zinc may be better absorbed if you take it with a protein-rich meal. If you know you have a significant problem with fat malabsorption, it may be better to take zinc on an empty stomach. If you are taking a separate zinc supplement for zinc deficiency, it is best to take it separately from calcium and iron supplements.

Zinc can have toxicity and side effects when taken in high doses for a long period of time. Zinc can deplete copper in the body, so if you are taking supplemental zinc, you need to make sure you have adequate copper. High doses of zinc can also cause digestive and renal problems, so it is best to take high doses only when instructed to do so by your doctor and only for recommended length of time. Be sure to ask your doctor about follow-up lab work.

For more information visit: http://ods.od.nih.gov/factsheets/Zinc-QuickFacts//

Vitamin A

All About Vitamin A and Vitamin A Deficiency

Another vitamin that you will need to supplement after your bariatric surgery is Vitamin A.

What does Vitamin A do?

Vitamin A is a fat-soluble vitamin that is important for the health of your eyes, immune system, skin, lung, digestive and urinary systems. It is also important in wound healing and cell reproduction.

What happens if I don't get enough vitamin A?

Changes in vision is often the first noticeable sign of a Vitamin A deficiency. You may notice that you cannot see as well as night. For example, it may be harder to drive at night, you may not be able to easily find your way to the bathroom, or you may notice that you need to turn on lights earlier in the evening. You may also find that your eyes are dry and irritate easily. Sometimes in early Vitamin A deficiency, people also experience dry hair, dry mouth, dry/itchy/bumpy skin, broken nails, and more frequent infections.

If a Vitamin A deficiency is severe or is allowed to progress, serious problems can develop. The most serious problem is permanent blindness.

What are other symptoms?

- Loss of tears
- Sores in the eyes
- Fatigue
- Dry cracked lips, mouth sores
- Diarrhea
- Bladder infections
- Vaginal infections
- Upper/lower respiratory infections
- Poor and delayed wound healing

Where can I get Vitamin A?

There are two kinds of Vitamin A. The first kind is found in plants and is called betacarotene. The second kind is found in animals and is called retinol or pre-formed Vitamin A. Retinol is found in foods that come from animals such as:

- Whole eggs
- Milk
- Liver
- Fortified cereals
- Margarine

Beta-carotene is found in:

- Red, orange and green vegetables
- Cantaloupes
- ▲ Apricots
- Mangoes
- Sweet potatoes
- Red peppers
- Tomatoes
- Peas
- Spinach

Vitamin A is a common dietary supplement in multivitamins and in capsules. As a supplement, you can find both beta-carotene and retinol.

If you have Vitamin A deficiency, your doctor will probably ask you to take supplemental Vitamin A and watch your dietary intake. Most of the time, if you are deficient your doctor will ask you to take retinol instead of beta-carotene.

If you are pregnant, it is important to talk to your doctor about how much Vitamin A is safe to take. Retinol at levels above 10,000 IU can be a problem in pregnancy. There is

no safety issue with beta-carotene in pregnancy. It is also important that you follow-up with your doctor for lab tests and other recommended care.

For more information visit: http://ods.od.nih.gov/factsheets/VitaminA-QuickFacts/.

Biotin (Vitamin H)

Biotin is also known as Vitamin H and is water-soluble. Biotin functions as a coenzyme for carbon dioxide transfer and is essential for fat and carbohydrate metabolism. Lack of biotin can also impair utilization of glucose. A lack of biotin is rare, but there are some conditions that may increase your need for biotin such as:

- Genetic disorder of biotin deficiency
- Seborrheic dermatitis in infants
- Surgical removal of the stomach

Other causes can be associated with biotin deficiency including: anti-seizure medications, prolonged use of oral antibiotics and eating raw egg whites.

Signs and Symptoms of Biotin Deficiency:

Early:

- ∆ Dry skin
- ▲ Acne-like dermatitis
- Fungal infections
- A Rashes scaly, red rash around the mouth, eyes, nose, and genital area
- ♣ Fine and brittle hair
- Nausea/vomiting
- ▲ Lack of appetite

<u>Later neurological symptoms appear:</u>

- Mild depression
- Mental status changes

- ▲ Lethargy
- Hallucinations
- Generalized muscle pain
- Numbness and tingling

Adequate daily intake of Biotin for adults: male and female = 30 mcg.

Calcium

What is Calcium?

Calcium is the most abundant mineral found in the human body. 99% of the total body calcium is stored in the bones and teeth. The remaining 1% is located in the blood, muscle, and fluid between the cells. The body maintains a constant level of calcium to ensure that vital bodily functions continue.

Purpose of Calcium:

- Blood vessel contraction and expansion
- Secretion of hormones and enzymes
- ▲ Sends messages throughout the body via the nervous system

Recommended Daily Amount of Calcium for Men & Women:

- $\stackrel{\wedge}{\sim}$ 14 18 years of age = 1300mg/day
- $\stackrel{\wedge}{=}$ 19 50 years of age = 1000mg/day
- $\stackrel{\wedge}{\sim}$ 51 + years of age = 1200mg/day

Foods that provide Calcium:

Dairy products such as milk, yogurt, and cheese are major sources of calcium. A serving size is equal to:

△ 1 cup (8 oz.) of skim milk

- △ 8 oz. low-fat yogurt
- △ 1.5 oz. natural cheese, i.e. cheddar cheese (1.5 oz cheese = 4 stacked dice)
- △ 2.0 oz. processed cheese, i.e. American cheese

Did you know that non-fat and reduced fat dairy products contain the same amount of calcium as regular dairy products?

Signs and Symptoms of Low Calcium:

- Numbness and tingling in fingers
- Muscle cramps
- ▲ Convulsions
- ▲ Lethargy
- ▲ Poor appetite
- ▲ Mental confusion

Did you know that low calcium levels can cause abnormal heart rhythms and death?

Understanding Calcium Absorption

Calcium absorption refers to how much calcium you absorb from the foods you eat. Calcium is absorbed in the digestive tract and goes into your circulation. There are several things that can affect calcium absorption:

- ▲ Amount of calcium consumed at one time large amount calcium = decreased absorption
- Age absorption decreases as we age

Did you know – when calcium intake is low or poorly absorbed, bone breakdown occurs. The body will use the calcium stored in the bones to maintain normal bodily functions such as:

- ▲ Nerve function
- Muscle function

Osteoporosis can result if calcium levels are low and bone loss occurs. Osteoporosis is a disorder characterized by porous, fragile bones. **Women** are at risk for osteoporosis as they age, due to their smaller skeletons and bone loss that occurs with menopause. Bone mineral density tests (BMD) can help determine bone mass. BMD can indicate whether you are at risk for osteoporosis.

Calcium and Medication Interactions:

Calcium supplements have the potential to interact with prescription and over-thecounter medications including:

- → Digoxin®
- Antibiotics like Cipro® and tetracycline
- ★ Thyroid hormones Synthroid®/Levothyroxine®
- Anticonvulsants − Dilantin®
- ▲ Some diuretics thiazide
- Laxatives
- Aluminum or magnesium antacids

Did you know – that iron interferes with calcium absorption? **DO NOT take iron and** calcium at the same time!

Weight Management and Calcium

Several studies show that eating high calcium foods, not supplements, can lead to lower body weight and less weight gain over time.

Food Sources of Calcium:

Yogurt, plain low-fat4	15 mg
Sardines, canned with bones	324 mg
Cheddar cheese, reduced fat	306 mg

Mozzarella, part skim	275 mg
Skim milk, 8 oz	.302 mg
Milk, lactose reduced 8 oz	285 mg
Salmon, pink, canned with bones	181 mg
Cottage cheese, low-fat	138 mg
Spinach, cooked, ½ cup	120 mg
Instant Breakfast drink, 8 oz	105-250 mg
Almonds ¼ cup	96 mg

Calcium Supplements:

Calcium carbonate is the most common form of calcium supplement. This is due to the fact that calcium carbonate is inexpensive. Calcium carbonate contains 40% calcium. **Calcium Citrate** contains only 21% calcium, but has better absorption in people who have decreased stomach acid, such as Gastric Bypass patients. So, *calcium citrate* is a *better form* of *calcium supplement* for *Gastric Bypass patients*.

Common complaints of calcium supplement use:

- Bloating
- Constipation

To reduce symptoms associated with calcium supplements:

- △ Spread the calcium dose throughout the day
- ▲ Change brands of calcium supplement
- ▲ Take supplement with meals

Hints for increasing your calcium needs:

- ▲ Use skim milk instead of water in recipes such as, hot cereals, pudding, mashed potatoes, etc.

- △ Sprinkle grated, reduced fat or fat-free cheese on salads or soups
- ▲ Use spinach, romaine, or other dark green salad greens instead of iceberg lettuce
- ▲ Add nonfat dry milk powder to your skim milk to boost the calcium level 1/3 cup powder to 1 cup skim milk. This will make it richer without changing the taste.

Vitamin D

What does Vitamin D do?

Vitamin D is a fat-soluble vitamin that is found in some foods, can be made in your skin after exposure to the sun, or can be found as dietary supplement. Vitamin D sends signals that tell your body to absorb calcium from the digestive system and put it in places like your bones. It is also important for your immune system, growth and development, and communication between some types of cells.

What happens if my Vitamin D is low or if I don't get enough Vitamin D?

If you do not have enough Vitamin D you can develop a condition called osteomalacia. Many times, this is a silent condition, which means you have no obvious symptoms that you feel or notice. When you have osteomalacia, your bones become soft and weak. You may also get weak muscles or bone pain (especially in your hips and back).

If your Vitamin D deficiency becomes severe or continues over a long period of time, there can be permanent disability due to bone loss. Serious problems may also develop with the nervous system and immune system.

What are other symptoms?

- Muscle tics, twitches, or spasms (especially facial)
- Unexplained fracture
- Depression, Seasonal Affective Disorder (SAD)
- ▲ Loss of balance
- Arrhythmia, hypertension

Where can I get Vitamin D?

Humans make Vitamin D in our skin in response to sun exposure. One way to get Vitamin D is to get adequate sunlight without or with very minimal SPF. Fatty fish, dairy products, fortified soy products, eggs, and liver are dietary sources of Vitamin D. If you have a Vitamin D deficiency, your doctor may recommend supplemental Vitamin D in addition to diet and sunlight. If you are supplementing Vitamin D, it is also important to make sure you have adequate calcium.

Other Important Things

As a fat-soluble vitamin, Vitamin D can have side effects and toxicity if taken at doses that are too high or if taken for too long. For this reason, it is not a good idea to take a high dose of Vitamin D on your own, unless instructed to do so by your doctor. Also, if our doctor has placed you on a high dose of Vitamin D, it is very important to take it as directed and to follow instructions for follow-up laboratory evaluations.

Medications NOT to be Taken After Surgery

- Motrin® − Ibuprofen
- ▲ NSAIDS non-steroidal anti-inflammatory drugs
- Time-released medications

Medications that are OK to take:

Mild Pain:

- ▲ Tylenol®
- ★ Tylenol Extra-Strength®

Gas:

- Simethicone® / Mylicon® chewables

Diarrhea:

Constipation:

- Milk of Magnesia®
- ▲ Peri-Colace®
- Dulcolax® suppositories

Frequently Asked Questions About Medications:

Q: What effect does weight loss surgery have on my medications?

A: Prescription or over-the-counter drugs may be absorbed differently after surgery, depending on the type of procedure. Your medication therapy may be affected by this change. In the early period right after surgery, larger tablets or capsules may not be recommended by your surgeon so that pills do not become stuck. Because of this, your surgeon may recommend that you take medications different forms, such as crushed, liquid, suspension, chewable, sublingual or injectable. Some long-acting medications and "enteric coated" medication may not be crushable. Some medication may be crushed and administered with food.

Sleeve gastrectomy and adjustable gastric banding tend to have little to no change in the absorption of medications. Roux-en-Y gastric bypass and duodenal switch can have more significant changes in how medications are absorbed. Check with your surgeon and pharmacist about how you should take each of your medications. Some patients need a higher dose of anti-depressants to have the same effect. This is not a complication, but you need to be aware of how you feel, and speak up with all your caregivers.

Q: Will my medications change after bariatric surgery?

A: Maybe. Some doses may change (see the previous question). Some medication doses may decrease as the obesity-related health conditions improve. For example, diabetic patients often require less insulin or other diabetes medications after surgery because glucose control can improve quickly. Patients who take high blood pressure and cholesterol medication can see their doses lowered if these disease states improve. Any changes in prescription medication should be overseen by your doctor; this is not something that you should do yourself.

Q: Which medications should I avoid after weight loss surgery?

A: Your surgeon or bariatric physician can offer guidance on this topic. One clear class of medications to avoid after Roux-en-Y gastric bypass is the "Non-steroidal anti-inflammatory drugs" (NSAIDs), which can cause ulcers or stomach irritation in anyone but are especially linked to a kind of ulcer called "marginal ulcer" after gastric bypass. Marginal ulcers can bleed or perforate. Usually they are not fatal, but they can cause a lot of months or years of misery, and are a common cause of re-operation, and even (rarely) reversal of gastric bypass.

Some surgeons advise limiting the use of NSAIDs after sleeve gastrectomy and adjustable gastric banding as well. Corticosteroids (such as prednisone) can also cause ulcers and poor healing but may be necessary in some situations. Some long-acting, extended-release, or enteric coated medications may not be absorbed as well after bariatric surgery, so it is important that you work with your surgeon and primary care physician to monitor how well your medications are working. Your doctor may choose

an immediate-release medication in some cases if the concern is high enough. Finally, some prescription medications can be associated with weight gain, so you and your doctor can weigh the risk of weight gain versus the benefit of that medication. There may be alternative medications in some cases with less weight gain as a side effect.

Q: Are there any additional prescription medications I will have to take after bariatric surgery?

A: Some patients may require anti-acid medications, either temporarily or indefinitely. Some surgeons prescribe a temporary medication for gallstone prevention, if you still have a gallbladder. Ask your surgeon if these will be needed.

Q: Are all medications crushable?

A: Not all medications are crushable. Whether or not a medication can be crushed would depend on the drug formulation. In general, non-coated, immediate release tablets may be crushed. It is important that you are VERY careful with medications, so please always check with your surgeon, primary physician, or pharmacist prior to making medication decisions. An online list of non-crushable medications is available at http://www.ismp.org/tools/donotcrush.pdf.

Body Mass Index

Body mass index (BMI) is an approximate measure of body fat. BMI is based on your height and weight and it applies to both men and women. As a factor to help in determining health risk, BMI may indicate if a patient is in the normal range for body fat. BMI is only an indicator and does have some limitations. Limitations are:

- Overestimate body fat in athletes or people with muscular builds.
- ▲ Underestimate body fat in older people or others with loss of muscle mass

BMI Table:

- ≜ Below 18.5 = Underweight
- 4 18.5 24.9 = Normal
- \triangle 25.0 29.9 = Overweight
- 4 30.0 above = Obese

BMI is not the only indicator of health risk. Other factors to look at when assessing your health risk include:

- ∆ Diet
- Physical inactivity
- ▲ Blood pressure
- Blood sugar
- ▲ Cholesterol level
- ▲ Family history of disease

To determine your **waist circumference**, place a measuring tape snugly around your waist. This is a good indicator of abdominal fat, which is another indicator of your health risk. Risk increases if your waist measurement is:

- ≜ Men over 40 inches

http://www.nhlbi.nih.gov/health/educational/lose_wt/risk.htm

We're Here for You

Now that your bariatric surgery is over, if you return to the hospital for any reason, I want to hear from you. It is important for me to know how my patients are doing after their bariatric surgeries.

Please let me know because I do care about you and your ongoing good health. I also need to know for tracking purposes. If we see several admissions for the same concerns, we need to know in order to serve you better. If there is anything I can do to contribute to your recovery and to help you stay on track, I'm ready to help.

Please call or have your nurse notify our clinic at any time if you have:

- ▲ Another surgery
- Visit to the Emergency Room
- See another physician
- Another procedure like endoscopy, EGD, X-rays, CAT scan, MRI, etc.

Contact Information:

My New Beginning, a department of Baylor Scott & White Medical Center – White Rock
214.324.6127 - Office
214.324.6627 - Fax
E-mail: mynewbeginning@tenethealth.com
Bariatric Post-Op
Follow-Up Appointment Schedule
Check with your surgeon to see what appointments you need.
• 1 Week:
• 2 Weeks:
• 1 Month:
• 3 Months:
• 6 Months:
• 9 Months:
• 1 Year:
• Annually:

Helpful Websites

Helpful Websites		
American Diabetes Association		
www.diabetes.org		
A Academy of Nutrition and Dietetics		
www.eatright.org		
American Heart Association		
www.americanheart.org		
American Obesity Association		
www.obesity.org		
Centers for Disease Control and Prevention		
www.cdc.gov		
h Maria additional Lanca de I Diagnitica de		
▲ National Heart, Lung, and Blood Institute		
<u>www.nhlbi.nih.gov</u>		
National Institutes of Health		
www.nih.gov		
www.shapeup.org		
A. The Meight Control Information Network		
★ The Weight-Control Information Network www.niddk.nih		

My Primary Care Doctor:	Phono:	
My Primary Care Doctor:		
My Bariatric Surgeon:	Phone:	
My Pharmacy:	Phone:	