

Surgical Weight Loss For Morbid Obesity

**Womack Army Medical Center
Fort Bragg, NC**

Information, Questions, and Answers

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Obesity Surgery

Surgery is a treatment option suitable for some persons with obesity. You and the Bariatric Service must work together to determine if you would benefit from obesity surgery, which is a major operation that will change your life in many ways. You must know about the risks and benefits of the surgery and the commitment you will have to make to lifestyle change and life-long follow-up that will be necessary.¹ You must also take into account the health risks of being severely obese, and the health benefits you can gain from losing excess weight. This fact sheet is intended to help you better understand obesity surgery and does not take the place of medical advice from your doctor.

Background and Health Risks of Obesity

Being obese or morbidly obese puts you at a higher risk for developing or worsening many serious medical conditions. Over millions of people in the United States are morbidly obese. Although morbid obesity is not completely understood, there is a strong genetic predisposition. There are more than 30 obesity-related medical conditions that can limit your quality of life and cause early death. Some obesity-related medical conditions include arthritis, several cancers, carpal tunnel syndrome, cardiovascular disease, gallbladder disease, gout, hypertension, infertility, liver disease, low back pain, obstetric and gynecologic complications, sleep apnea, stroke, type-2 diabetes, and urinary stress incontinence.

Obesity is usually a progressive problem. As weight begins to increase, the burning of calories decreases as mobility is impaired. There is often a feeling of frustration and guilt with each bit of weight gain.

Obesity is commonly measured by using the Body Mass Index (BMI). By knowing your height and weight and using a BMI chart you can find your BMI. You are considered obese if you have a BMI of 30 or more.² The number of adult Americans (age 20 or older) who are obese has increased significantly in less than 20 years - from 15% to 22.5%. Severe obesity is defined as having a BMI of 40 or more.³ Approximately 2.9% of US adults (age 20 or older) today are severely obese.

Weight loss is recommended for persons with morbid obesity. Losing excess weight can improve your health by lowering risks from obesity-related medical conditions. Methods of weight loss include dietary therapy, increased physical activity, behavior therapy, drug therapy, surgery or a combination of therapies. Surgery is a well-established method of long term weight control for persons with morbid obesity. Several studies have reported patient weight loss of 60% of excess weight after five years.³

The benefits of obesity surgery appear to outweigh the risks.² Each person's medical situation is different, however, and you should discuss with your doctor whether the benefits of obesity surgery outweigh the risks in your specific case.⁴

Surgery and Weight Loss

Obesity surgery helps you lose weight by changing the way your body digests and absorbs food. Your body *digests* food to break down what you eat into small pieces of nutrients (carbohydrates, proteins, fats, vitamins and minerals). When the pieces are small enough, the cells of your body *absorb* the nutrients to give you energy to live.

Normally, digestion and absorption begin in the stomach, continue through the small intestine and end in the large intestine, which digests and absorbs what it can and eliminates the rest as waste. Obesity surgery involves making changes to the stomach and/or small intestine.

The Stomach - is made smaller in size with surgery. A section of your stomach is divided into a small pouch which limits the amount of food it can hold and causes you to feel full. This is called *food intake restriction*.^{6,7}

The Small Intestine - is where most of digestion and absorption take place. It has three parts: the duodenum (upper part connected to the stomach), the jejunum (middle part) and the ileum (lower part connected to the large intestine). Surgery shortens the length of the small intestine and/or changes where it connects to the stomach. This limits the amount of food that is completely digested or absorbed and is called *malabsorption*.^{6,7}

Through food intake restriction, malabsorption or both, you can lose weight since less food either goes into your stomach or stays in your small intestine long enough to be digested and absorbed.

Types of Obesity Surgery

There are three types of obesity surgery: 1) restrictive, 2) malabsorptive, and 3) combined. Different ways of performing each surgery have been developed. Each type of surgery and operative procedure has its own risks and side effects. Your doctor can help you decide which is best for you.

- 1. Restrictive Surgery** - uses bands or staples to create food intake restriction. The bands or staples are surgically placed near the top of the stomach to section off a small portion that is often called a *stomach pouch*. A small outlet, about the size of a pencil eraser, is left at the bottom of the stomach pouch. Since the outlet is small, food stays in the pouch longer and you also feel full for a longer time.

Operative Procedures

- **GASTRIC BANDING** – a well tested operation performed in Europe and US for many years. Recent studies indicate that the gastric banding procedure aids patient in losing weight and resolving their diabetes. It does not involve staples but risks include slippage, failure to lose weight, erosion and infection. About 20% of patients have their bands removed at sometime postoperatively.

- **SLEEVE GASTRECTOMY** – is an operation that involves removing all of the stomach but a very small tubular segment. The operation is successful in restricting intake but does not add any malabsorptive component.

Benefits and Risks

- **Success rate:** Eighty percent of patients lose some weight; 30% reach normal weight category.⁸ For Sleeve Gastrectomy, the weight loss success rate is 40 to 63% of excess body weight over a three year period¹ and 50 to 60% after five years.³

- **Side effects:** The stomach pouch holds about a half of a cup to one cup of food. Eating too much at once or not chewing enough to break down food can cause nausea, stomach discomfort and vomiting.^{3,8} Protein and vitamin deficiency have been reported in few cases, due to continual vomiting.

- **Complications:** Possible complications include leaking of stomach juices into the abdomen, injury to the spleen, erosion of the band, breakdown of the staple line, and stomach pouch stretching from overeating. Mortality rate is less than 1 percent.

After Surgery

- **Lifestyle Adjustments:** Patients must learn to eat smaller amounts of food at one time, to chew their food well and to eat slowly.³ Failure to adjust eating habits may inhibit weight loss.⁸

· **Surgical Follow-up:** Follow-up, especially in the first three months after surgery, is necessary to maintain the proper intake of protein, calories, minerals and vitamins. With proper follow-up care and patient compliance, protein deficiency which typically occurs in the first three months after surgery, can be corrected within 18 months after surgery.³ Lap band follow up is needed for regular adjustments to the band.

2. Malabsorptive Procedure

Operative Procedure

Biliopancreatic Diversion (BPD) is one of the most complicated of the current operative procedures in obesity surgery⁷, sometimes involving the removal of a portion of the stomach. The remaining section of the stomach is connected to the ileum.⁸ BPD successfully promotes weight loss⁸, but this procedure is typically used for persons with severe obesity who have a BMI of 50 or more.⁷

3. **Combined Restrictive and Malabsorptive Surgery** - is a combination of restrictive surgery (stomach pouch) with *bypass* or malabsorptive surgery, in which the stomach is connected to the jejunum or ileum of the small intestine, bypassing the duodenum.⁸

Operative Procedure

· **Roux-en-Y Gastric Bypass (RGB)** - is the most commonly performed gastric bypass procedure. RGB involves a stomach pouch for food intake restriction. A direct connection, which is Y-shaped, is made from the ileum or jejunum to the stomach pouch for malabsorption. The longer the segment of small intestine bypassed, the greater the malabsorption component and the greater the weight loss. Gastric bypass with an extensive segment of small bowel bypassed is termed “Long Limb Gastric Bypass.”

Benefits and Risks

· **Success Rate:** Researchers have found greater weight loss in gastric bypass (93.3 pounds) compared to gastroplasty (67 pounds) after one year.² Over two years, gastric bypass surgery patients have been shown to lose two-thirds of excess weight.⁸ The success rate for weight loss for RGB is 68 to 72% of excess body weight over a three year period, and 75 percent for BPD.¹ After five years, the average excess weight loss from gastric bypass surgery ranges from 48 to 74%.³

· **Side Effects:** The “dumping syndrome” in which food moves too quickly through the small intestine can cause nausea, weakness, sweating, faintness, and sometimes diarrhea after eating. There can also be an inability to eat sweets without severe weakness and sweating causing patients to lie down to let the symptoms pass. Dairy

intolerance, constipation, headache, hair loss and depression are other possible side effects.^{7,8}

- **Complications:** There is a risk for nutritional deficiencies due to the bypass of the duodenum and part of the jejunum where many nutrients are absorbed. Nutritional deficiencies include malabsorption of vitamin B12, leading to anemia and iron deficiency. The reduction in vitamin D and calcium absorption can cause osteoporosis and other bone disease.^{3,8} Other complications are similar to those of restrictive surgery and are due to creating a stomach pouch.

After Surgery

- **Lifestyle Adjustments:** Lifelong use of nutritional supplements such as multivitamins, vitamin B12, vitamin D and calcium is necessary.^{3,4}

- **Surgical Follow-up:** Physical, nutritional and metabolic counseling are needed to prevent nutritional deficiencies.³

4. Other Procedures

Restrictive and gastric bypass surgeries are safe and effective over the long-term.⁷ Other procedures for weight loss which are usually not recommended include the following:

- **Intestinal Bypass** - These operations involved reducing or bypassing parts of the small intestine, and were more common in past years. Some clinics have expertise in managing the typical complications of this surgery and continue to offer it as an option.⁷

- **Jaw Wiring** - This is a form of food intake restriction for temporary use in patients without respiratory problems. It can be effective for short-term weight loss. However, weight regain occurs soon after the wires are removed.⁷

- **Liposuction** - This is the most frequent cosmetic operation in the United States in which fat tissue is removed. Relatively small amounts of total body fat can be removed safely, however, and little weight is lost.⁷

Patient Profile

The International Bariatric Surgery Registry (IBSR) has put together a database with information on 14,641 people who have had obesity surgery.⁵ The patients had the following characteristics:

- Average Weight at Time of Operation: 279.4 pounds (+/- 60.3)
- Average BMI at Time of Operation: 46 (+/- 8.3)
- Patients with a BMI between 35 and 39.9: 19.7%
- Patients with a BMI of 40 or more: 76.1%

Are You A Candidate for Surgery at Womack?

You may qualify for obesity surgery:

- If you are morbidly obese (BMI of 40 or more) *or* have a BMI of 35 to 39.99 with serious medical conditions (such as high blood cholesterol and triglycerides, hypertension, sleep apnea, type 2 diabetes or other serious cardiopulmonary disorders).
- If you have tried other methods of weight loss (changes in eating, behavior, increased physical activity and/or drug therapy) and are still morbidly obese.
- If you are unable to physically perform routine daily activities (work-related and family functions) and your quality of life is seriously impaired due to the severity of your obesity.
- If you understand the procedures, risks of surgery, and effects after surgery.
- If you are motivated to making a lifelong behavioral commitment that includes well-balanced eating and physical activity habits which are needed to achieve the best results.

You should not:

- Continue to smoke or use nicotine products (you are encouraged to be nicotine free 2 months prior to surgery). Failure to stop using these products puts you at increased risk for complications and it is in your best interest, short term and long term, to stop.
- Be suffering from any severe psychological problems.
- Be addicted to alcohol or other drugs.
- Be pregnant and you should be willing to postpone any pregnancy for at least 18 months after surgery. (Patients are encouraged to complete child bearing prior to surgery).

Additional criteria:

- You must undergo a psychological evaluation. This is so if you were to need help we can get that for you prior to adding additional stressors to your life.
- You will see a nutritionist to educate you on what to expect post-operatively.
- We will have you get a complete evaluation by your primary care provider to ensure that your general health is well and that appropriate routine screening and evaluations are complete.
- If you are female and over 40 we will obtain a mammogram.
- If you are over 50 years old, a colonoscopy will need to have been completed.
- You may also need a cardiac evaluation, a sleep study, and PFT's.
- Labs must be completed.
- Support Group Meetings must be attended (a minimum of one).
- In order for the Bariatric Team to take care of all our patients needs, we ask that appointments are scheduled and kept.

At Womack, we are committed to your care. Surgical weight reduction is a major decision and should not be taken lightly. The procedure will literally change your life. It is essential that if you make the commitment to surgery that you also commit to a total lifestyle change. We want to help you reach and maintain your weight loss goals. We offer a support group for those who have undergone weight loss surgery and those considering the operation. We feel that involvement and discussion with others who have pondered the decision to have surgery can be very helpful.

As with any procedure, even though you have met all the necessary criteria, there is always the possibility that a cancellation or postponement may occur. Postponements and cancellations can happen for various reasons, for example a patient illness or infection, an unexpected change in the surgeons schedule, an emergency procedure, etc. Sometimes, these adjustments happen with very little notice. We will do our best to minimize changes, and we appreciate the patient's cooperation and understanding when these situations arise.

We also know that much planning and coordination must go into the patient's at home care. Deployments, PCS, and TDY are a part of Army life and therefore a part of this program, both patients and staff. We do our best to meet each patient's scheduling needs. Please understand that this is a tremendous task and though we try, we cannot accommodate them all.

Since changes may occur at the last minute including the cancellation of your procedure, please avoid making financial or scheduling commitments until you have had your surgery. If you do make a commitment, please be aware that we will do our best to make decisions based on what is the best decision to make *medically*. Other issues are personal, so please be cautious prior to buying a plane ticket, or inviting your mother-in-law over for an extended period of time.

Surgeries Offered at Womack Army Medical Center

Laparoscopic Roux – En- Y Gastric Bypass

This technique uses a number of small incisions to complete the operation. A small gastric pouch is made and the small bowel is bypassed. The gallbladder will not be removed. Usually the surgery will last two and a half hours and post-operatively you will recover in the ICU. That night you will get out of bed and sit in a chair. You may walk if you are able. Post-operative day one, an x-ray study may be performed to rule-out a leak. If no leak exists then you will be encouraged to take fluids by mouth. Also you will ambulate. Patients are usually discharged 1 to 2 days post-operative with no complications.

SLEEVE GASTRECTOMY

This procedure is almost always performed laparoscopically. It involves removing most of the stomach and leaving a small tubular stomach behind. It is a restrictive operation that takes as long as a gastric bypass. This procedure is selected based on co-morbid conditions, small bowel issues, multiple previous small bowel operations, need for certain medications (steroids, anti-seizure medications, regular antiviral medications and need for permanent anti-inflammatory therapy).

LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING (LAGB)

LAGB is a purely restrictive procedure that utilizes a small band device around the top portion of the stomach to allow only a small amount of food through at a time. It is a safe operation with a very low mortality rate of 0.0%. It requires very close follow up with routine appointment for ‘band fills’ at which time is either taken from or added to the band to increase or decrease the restriction depending on patient interview. This operation is one designed for an exclusive group of patients and will be discussed on an individual basis.

Risks and Benefits of Surgery

- Complications caused by the surgery may be as high as 30 percent or more.⁴
- Complications requiring a hospital stay of seven or more days were reported in 1.35% of patients from the IBSR database. Some of the complications involve the heart or liver, rupture of blood vessels in the lungs, infection surrounding the diaphragm area, leaking and bleeding of the stomach and intestines, blood clotting of veins, and blockage of the small intestine.³
- Complications requiring a hospital stay of less than seven days were reported in 5.28% of patients from the IBSR database. These complications include breathing difficulties, wound infections, and injury to the spleen.³
- Ten to 20% of patients need follow-up operations to correct complications such as abdominal hernias.⁸
- Gallstones develop in more than one-third of patients as a result of losing a large amount of weight or from losing weight quickly.⁸ Gallstones can often be prevented by taking medication.
- Anemia, osteoporosis and other bone disease are nutritional deficiencies that develop after the surgery due to long-term loss of absorptive function.² You can prevent nutritional deficiencies, which occur in almost 30% of patients, with proper attention to vitamin and mineral intake, especially vitamins B12 and D, calcium, folate and iron.^{2,7}
- Women of childbearing age should be aware that quick weight loss and nutritional deficiencies can harm a developing fetus.⁸ You are to avoid pregnancy for 18 months prior to surgery.
- The RGB and sleeve gastrectomy death rate is relatively low.⁴ Within 30 days of surgery, death occurred in less than a quarter of one percent (0.17%) of patients in the IBSR database. Pulmonary embolism was the most frequent cause of death.³
- Divorce rate appears to be higher after bariatric surgery.

General Benefits of Obesity Surgery

- Improvements in surgical techniques have resulted in considerable progress in safety, effectiveness and long-term integrity for promoting weight loss.^{2,3}
- Within 30 days of surgery, 93.4% of patients from a national registry reported no complications from surgery.³
- Weight loss usually occurs soon after obesity surgery and continues for 18 months to two years. Most patients regain some weight after this time, however few regain it all.^{3,8}
- After five years, patients have reported maintaining a weight loss of 60% of excess weight.³
- Patients will often see improvements in obesity-related medical conditions that they had before surgery such as diabetes mellitus, glucose intolerance, high cholesterol/triglycerides, hypertension, and sleep apnea.^{3,4,8} In general, 60% of patients with obesity-related medical conditions are no longer on medication for these conditions three years after surgery.²
- Patients have reported an enhanced quality of life, improved mobility and stamina, better mood, self-esteem and interpersonal effectiveness, and lessened self-consciousness.^{3,7}

Preparing For Surgery

Below is a list of things that you can do to minimize your personal risks

Pre-operative diet instructions:

2 weeks prior to surgery low carbohydrate, high protein diet (Atkins type). This will allow your liver to not be congested with fat and make it more pliable, less likely to crack, and provide more room to perform the surgery.

Exercise:

Do aerobic exercise for 30 minutes 5 days a week. Walking is the easiest. If you find that you have joint pain then water aerobics or an exercise bike may be the best method of exercise.

Showering:

2 days before the operation, we desire that you shower twice daily with an antibacterial soap. Hibiclens or Dial are recommended soaps. Careful attention should be paid to the trunk from the arm pits to the groin. Pat dry any reddened areas or use a blow dryer on low heat to dry difficult to reach areas.

Medicines:

Avoid oral contraceptives, aspirin or aspirin containing products 10 days prior to surgery as taking them can cause bleeding. Motrin, Naproxen, and other NSAID's should be stopped 3 days prior to surgery. Herbal medications such as Gingko Biloba, garlic, Kava Kava, Valerian Root, etc. should be stopped at least 10 days prior to surgery. Ensure that your surgeon knows all of your medications and their doses.

Stop Using Nicotine Products:

These products are unhealthy and can contribute to bad healing and increased infections.

Avoid Alcohol:

Alcohol can cause gastric irritation and can damage the liver. It is also a high calorie drink. Post-op you should avoid alcohol as well.

Questions and Answers

Although everyone is treated as an individual, there are some frequent questions about weight reduction surgery with similar answers.

Q: What is the average length of stay?

A: The average length of stay after the operation is 4 days for an open procedure and 1- 2 days for a laparoscopic procedure.

Q: What is the recovery time?

A: Most patients should be able to return to non-strenuous work in two to four weeks. You should be back to full activity in 4-6 weeks.

Q: How big is the incision for an open procedure?

A: The incision runs from the bottom of the breast bone to just above the belly button. In some unusual cases, a larger incision is required. 12 to 15 centimeters is probably a standard length for most surgeons.

Q: Will I be hungry?

A: Most patients report a decreased appetite. There are many reasons we feel hungry or a desire to eat. The operation will not address psychological, emotional, or other personal issues.

Q: How soon will I lose weight?

A: Immediately! Your body will become a fat burning machine. It will be important for you to exercise and take vitamins to remain healthy.

Q: How fast will I lose weight?

A: The initial weight loss is rapid. The period of rapid weight loss slows at 8-12 months. There is a lot of individual variability due to factors including pre-operative weight, exercise, and adherence to diet. Ten pounds per month for the first six months is common. A weight loss of 60-70% of excess body weight is typically seen after RYGB. Exercise is important after the procedure to maintain muscle. You will be healthier and feel more energetic if you exercise. The operation is only the first step in improving your health.

Postoperative Instructions after Obesity Surgery

These instructions will serve as general guidelines to assist you in your recovery after surgery for morbid obesity. If you have a question or a problem, do not hesitate to call the Surgery Clinic for instructions.

Discharge Instructions:

1. Hydration is important! The goal is to consume at least 64 ounces of fluid per day. That is 4 ounces of low calorie fluids every hour.
2. Roxicet elixir as directed.
3. Nexium as directed until gone.
4. Colace as directed until off pain medications.
5. Check for warning signs twice daily for the first week .
 - Call if fever is 101 or higher.
 - Wounds become hot, red, swollen, or drain pus. Some redness is normal.
 - A leg becomes swollen and painful on one side.
 - You have a hard time breathing.
 - You think you have a urinary tract infection, yeast infection, or severe diarrhea.
 - You vomit all food and liquid for more than 8 hours.
 - You have pain that is not adequately controlled with medication.
6. Contact information (from hours of 0800-1600)
 - Jasmin Black (Bariatric nurse) 907-0787.
 - Caron Toney (Bariatric Administrator) 907-9927.
 - General Surgery front desk 907-7405.
 - If you believe you have an emergency after business hours, go immediately to the ER or call for an Ambulance.
7. Hydration is important. If your urine is dark, you are not drinking enough fluids.
8. You may shower; but do not scrub incisions for 3 weeks. (Notify us if there is redness or drainage from incisions.) Pat incisions dry. Do not soak in a tub or go swimming for 2 weeks.
9. Contact us if there is vomiting or diarrhea which lasts over 24 hours, or persistent abdominal pain which does not resolve in 4 hours.
10. Perform incentive spirometry four times daily for 10 days.
11. Walk daily with a goal of walking 30 minutes at a time. Then increase the speed.
12. Increased gas is common the first 3-6 weeks; we recommend Gas-x or Digel for relief.
13. Do not take any anti-inflammatory pain medications unless approved by your surgeon (i.e. ibuprofen, advil, motrin, naprosyn, aleve, day pro, etc).
14. Take vitamin-calcium supplement daily
 - Chewable multivitamin with iron should be started at discharge.
 - At six weeks, begin vitamin D one per week.
 - At six weeks, take calcium tablet twice per day.

15. Female patients should not become pregnant for at least 18 months or until weight loss has stabilized. **Injury and birth defects could occur to the unborn child.** Be sure to use contraception during this time.
16. You may only drive when off narcotic pain medications.
17. Emotions may fluctuate. You may feel very happy or extremely sad which is a normal adjustment after surgery. If you need emotional assistance, please call us so that we can make arrangements for you.
18. You will need to be seen 7-14 days after your surgery for a follow-up appointment. Your surgeon may not be available to see you immediately and if you would like to see him/her there may be a significant wait. Otherwise, the nurse can evaluate your wound and ensure that you are on track.
19. Hydration is important so make sure you are drinking plenty of water.

POST-OP DIET INSTRUCTIONS:

General Guidelines:

- Chew foods thoroughly with approximately 30 chews per bite.
- Eat slowly. It should take 30 minutes to eat a meal.
- Give yourself time. You should take 10 to 15 minutes to eat an ounce of food. 1 ounce equals two tablespoons.
- Consider using small plates and bowls. Children's silverware may make it easier to downsize your foods.
- Eliminate high calorie drinks like milk shakes, soft drinks, and alcohol from your diet.
- Avoid frying foods. You may not tolerate fat or greasy foods after surgery.
- Eliminate high calorie foods with little or no nutritional value like cakes, cookies, candy, etc.
- Eat the protein portion of your meal first, then the vegetables, then the starches, and then the fruits.
- Stop eating when or before you feel full. Signs of fullness are pressure or fullness below your ribs, nausea, or pain in your shoulder area or upper chest.
- Do not drink 30-45 minutes before or after meals.
- Drink approximately 64 ounces of low calorie beverage per day.
- Take a liquid or chewable vitamin supplement daily.
- Consume 2 servings of dairy each day. If you cannot then talk with us so we can start you on calcium supplements.
- Exercise regularly. We want you to walk 30 minutes a day.

Common Food Intolerances:

- Carbonated beverages
- Meats
- White bread
- Seeds and skins of fruit
- Celery and sweet potatoes
- Spicy foods
- Fried foods
- Food and beverages high in sugars
- Milk

SUMMARY

- **Follow 6 stage diet plan to allow gradual adjustment**
- **Eat only at set meal time**
- **Go slow**
- **Chew well**
- **When you feel full: STOP!**

* Liquids, junk food and sweets do not relieve hunger! Only solid food, which fills the pouch and empties slowly, will relieve hunger.

Nutrition Facts

The Gastric Bypass Diet is designed to bring about significant weight loss. Learning new eating habits and following the diet correctly will help to maintain this weight loss over time. In general, the gastric bypass diet includes foods that are high in protein, and low in fat, calories, and sugar (carbohydrates). Important vitamins and minerals are provided as supplements.

Protein is the nutrient that the body uses to build new tissue. It is very important to get enough protein right after surgery, to make sure that wounds heal properly. Over the long term, protein in the diet will help preserve muscle tissue, so that weight can be lost as fat instead. Foods like lean red meat or pork, chicken or turkey without the skin, fish of almost any type, eggs, and cottage cheese are high in protein and low in fat.

Sugary foods include candy, cookies, ice cream, milkshakes or slushes, soda pop, sweetened juices or gelatin, and most desserts. Even complex carbohydrates are converted to sugars by the intestines. Carbohydrates should be limited. The gastric bypass diet is low in sweet and sugary foods for three reasons. First, these foods are high in calories and fat. Even in small amounts, they could make weight loss difficult. Second, eating sweet or sugary foods promotes "dumping," a reaction which can occur after the gastric bypass operation. Experiencing the unpleasant symptoms of dumping syndrome may limit the desire to eat sweet foods. Finally, most sweet and sugary foods don't provide many vitamins or minerals for the calories they take up and since calories are so limited on the gastric bypass diet, it is important that every food contribute its fair share of nutrients.

Fat may be difficult to digest after gastric bypass surgery. Too much fat delays emptying of the stomach and may cause reflux, a back-up of stomach acid and food into the esophagus that causes heartburn. Fat may also cause diarrhea, nausea, or stomach discomfort. High-fat, fried foods and fatty meats are common offenders.

Vitamins & Minerals are an important part of the gastric bypass diet. Since the diet allows only small amounts of a limited variety of foods, it may be difficult to get enough vitamins and minerals from food alone. Deficiencies can develop in a matter of months.

Iron, folate, vitamin B-12, and calcium are the nutrients most affected. We require our gastric bypass patients to take a multivitamin/mineral supplement.

The ABC's of Eating Right

In all stages of the gastric bypass diet, the way to eat is just as important as what to eat.

Things to remember:

The new stomach can only hold a small amount (1/2 cup) at a time

Eat 3 to 6 small meals a day

Chew food thoroughly and eat slowly

Avoid chewing gum as it could block the stomach outlet if swallowed

Do not overeat

Relax and enjoy your new life

Sample Menu

Breakfast	Lunch	Dinner
banana - <i>1/4 med</i> Scrambled egg - <i>1</i> toast, white - <i>1/2 slice</i> margarine - <i>1 tsp</i>	broiled chicken breast- <i>2 oz</i> carrots, boiled - <i>1/4 cup</i> margarine - <i>1 tsp</i> salad - <i>1/2 cup</i>	haddock, baked or broiled - <i>2 oz</i> green beans - <i>1/4 cup</i> dinner roll - <i>1/2</i>
Morning snack	Afternoon Snack	Evening snack
graham crackers - <i>2</i> pudding, sugar-free, made with 2% fat milk - <i>1/2 cup</i>	fruit cocktail, waterpacked tuna - <i>1/2 cup</i>	cheese, American - <i>1 oz</i> saltine crackers - <i>2</i> mustard - <i>1 tsp</i>

**Consume nonfat milk with protein supplement between meals, throughout the day.
Drink no more than 2 to 3 ounces at a time, for a daily total of 2 cups.*

This Sample Diet Provides the Following

Calories	1011	Fat	37 gm
Protein	71 gm	Calcium	1065 mg
Carbohydrates	97 gm	Iron	6 mg

Nutritional Guidelines after Gastric Bypass Surgery

Gastric bypass surgery was developed to induce weight loss and to avoid the medical complications of severe obesity. The surgery greatly reduces the stomach to the size of a small egg. A healthy diet after surgery helps with healing and maintains nutritional health.

Making new food choices and developing new eating habits helps achieve and maintain weight loss and prevent nutrition-related deficiencies or complications such as anemia and osteoporosis.

Key Points to Follow After Surgery:

1. **Put protein first at meals.** After surgery, protein helps heal wounds and helps reduce muscle loss. It is rich in important nutrients such as zinc, iron, and magnesium.

Protein Sources:

cottage cheese
cheese
dairy yogurt
egg substitute
beef, lamb
pork

poultry
fish, shellfish
deli meat,
Lactaid® milk
buttermilk, skim or one percent
milk, soy milk
tofu and texturized vegetable protein

Chew red meats thoroughly to avoid serious problems, such as stomach obstruction or regurgitation.

2. **Maintain a half-cup portion size at meals for the first six months after surgery.** Increase portions thereafter to one cup. Frequent overeating at meals hinders weight loss and stretches the stomach. So if you exceed the one-cup portion, consult a doctor or dietitian.

3. **Avoid high-calorie drinks.** These include regular soda, pre-sweetened iced tea, fruit juices and alcoholic beverages. Substantial amounts of these drinks hinder weight-loss. Limit to no more than two cups or sixteen ounces per day. But the best advice is to avoid them.

4. **Also avoid carbonated beverages** because they can cause excessive discomfort and stretch the stomach.

5. **Drink enough fluids.** Consume at least sixty-four ounces of fluid a day. Remember to sip slowly and **avoid gulping.**

For the first month after surgery: Drink protein-rich fluid as much as possible. (Examples include: one percent or skim milk, protein supplements that can be obtained at any grocery store or nutrition store or No-Sugar-Added Carnation Instant Breakfast®). Avoid “balanced” nutrition supplements containing more carbohydrates than protein (always read the labels). You need 70 grams of protein per day.

6. **Eat slowly and stop eating and drinking when you are full.** Pay attention to signs of fullness to prevent overeating. Overeating or bingeing can stretch the stomach and hinder weight loss or lead to problems with nausea and vomiting.

7. **Stick to sugar-free, low-fat foods.** Foods high in sugar (carbohydrates) and fat may cause diarrhea, abdominal discomfort or "**dumping syndrome.**" And they can slow weight loss.

Dumping syndrome results from a rapid passage of food into the small intestine and shifts fluid too quickly into the intestine. The result often is diarrhea and dehydration. Cramping, sweating, flushed appearance, dizziness, weakness, and headache characterize dumping syndrome.

Examples of High-fat foods

potato chips
ice cream
fried food
fast food
High-fat meats:
bacon, sausage, hot dogs, pepperoni, bologna
frozen entrees
cream soups
donuts, cakes, icing

High-sugar foods

regular soda
iced tea
lemonade
candy
cakes, cookies, pies
regular pudding and yogurt
regular gelatin
jelly, honey, marshmallows
sugar-coated cereal
regular hot chocolate

8. Each day, take two children's chewable multivitamins with iron for the first month after surgery. Look for "Complete" on the multivitamin label.

After a month, switch to an adult-formulated capsule or prenatal vitamin. Take one dose each day on a lifetime basis. In addition to a daily multivitamin, take a calcium supplement in the form of calcium carbonate 650 mg twice per day or calcium citrate (500-600 mg). Women who are still menstruating may need an iron supplement.

9. The combination of swallowing air and a smaller stomach may cause frequent burping.

10. Some people may eat and drink at the same time after surgery with no problem. Others may experience discomfort.

Special Considerations

Bariatric surgery creates dramatic changes in the size and shape of the stomach. It may take awhile to get used to these changes. Patients report a wide variety of complications after surgery. Some of these will go away with time, while others can be lessened with adjustment of the diet.

Nausea and vomiting are the most common complications occurring in the first few months after gastric bypass surgery. They may occur after eating too fast, drinking liquids while eating, not chewing enough, or eating more than the pouch can comfortably hold. It is necessary to learn to eat very slowly and chew foods thoroughly. Nausea and vomiting can also be triggered after trying new foods. If this happens, allow a few days to pass before trying a new food again. Notify a physician if frequent vomiting becomes a problem.

Dehydration (loss of body fluids) is also an important concern, especially if vomiting or diarrhea is frequent. Prevent dehydration by drinking water or low-calorie beverages between meals (when there is no food in the stomach), but remember that the stomach can only hold a small amount at any given time. Signs of dehydration are dry mouth, dry skin, headaches, and decreased amounts of dark yellow urine. If this starts to occur increase your fluid intake.

Dumping Syndrome occurs when food passes too quickly from the stomach into the small intestine. Symptoms may include a combination of nausea, uncomfortable fullness, cramping, and diarrhea, or weakness, sweating, and fast heart rate. Dumping can be provoked by eating very sweet or sugary foods such as high calorie fruit juices, sodas, sweets, cakes, honey-mustard dressing, sweet and sour sauce, etc. Reduce intake of sweets and notify a physician if these symptoms occur.

Food Intolerances, especially to red meat, milk, and high-fiber foods, are experienced by many patients. Since food intolerances vary with the individual, a dietitian can help with sorting out food choices to minimize symptoms such as stomach discomfort, nausea, or diarrhea.

Hair loss is something we all get concerned about, but may affect you at 3-4 months after surgery. Common causes include unbalanced diet and stress. This is a self-limited process normally so eat a balanced diet, ensure adequate protein, and quit pulling your hair out. Your hair should stop thinning in a few months.

Overeating is something almost all people who require gastric bypass surgery have had problems with at some time. The causes for this are complex, involving genetics, emotions, upbringing, and even the functions of the brain. None of these reasons change after bypass surgery, except that the stomach is now much smaller. Eating more than the new stomach can hold may cause vomiting, expansion of the pouch, weight gain, or even rupture of the stomach. Education, counseling, and group support can help to prevent overeating and are just as important as diet to the success of the operation.

Excess Skin is another common issue that confronts many people. While this surgery has many benefits many people do not find a surplus of skin one of them. You may need to consider plastic surgery as a possible means to correct this problem. The DoD may or may not be able to provide this service so be prepared to pay for plastic surgery out of pocket if you think you are going to need plastic surgery in your future.

Others: Stomach pain, ulcers, and gastritis (an inflammation of the stomach lining) are complications which may require medical attention. Notify a physician if frequent stomach pain becomes a problem. Over the counter anti-acids containing calcium may be quite helpful.

Fluids

At every stage of the gastric bypass diet, it is important to prevent dehydration by drinking enough fluids. Tips for doing it right:

Drink 1 cup of water or no-calorie beverage between each meal

Gatorade, Power-Aide, and other “hydration fluids” are sugar water and should be avoided

Fluids should add up to at least 8 cups (64 ounces) each day

Sip slowly and make beverages last 30 minutes or more

Finish drinking 30-45 minutes before meals

Approximate follow-up After Surgery

7 -14 days Post-op: Evaluation of wound.
Suture removal (if any)
Encourage journal.
Ensure on Stage III diet.
Weigh patient on clinic scale and record.
Continue liquid or chewable vitamin and mineral supplementation.

One month Post-op: Evaluation of wound.
Record dietary history.
Encourage protein intake.
Encourage and ambulation and exercise.
Weigh patient on clinic scale.
Stage VI diet. Chew well.
MVI

3 months Post-op: Check labs
Record dietary history. Encourage protein intake.
Weigh patient on clinic scale.
Continue vitamins.
Encourage post-op support group meeting attendance

Six months Post-op: Check labs
Record dietary history. Encourage protein intake.
Weigh patient on clinic scale.
Continue vitamins.
Encourage post-op support group meeting attendance

One Year Post-op: Check labs
Record dietary history. Encourage protein intake.
Weigh patient on clinic scale.
Continue vitamins.
Encourage post-op support group meeting attendance

Yearly: Check labs
Record dietary history.
Weigh patient on clinic scale.
Continue vitamins.
Encourage post-op support group meeting attendance

Other Resources

Internet

- www.obesityhelp.com
- www.bariatriceating.com
- www.asbs.org
- www.nlm.nih.gov/medlineplus/weightlosssurgery.html
- www.unjury.com

Support Groups/Educational Classes

- Pre-op Patients – monthly in the Weaver Auditorium (see handout for dates and times). The Weaver Auditorium is located on the ground floor of Womack.
- Post-op Patients – monthly in the Weaver Auditorium. (see handout for dates and times)

Books

- Weight Loss Surgery: Finding the Thin Person Hiding Inside You by Barbara Thompson
- Weight Loss Surgery for Dummies
- The Real Skinny on Weight Loss Surgery: An Indispensable Guide to What You Can Really Expect!

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Illustrations

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NOTES

Counseling Form

Gastric bypass surgery for morbid obesity is a major abdominal operation with lifelong consequence. I have read and understand the handout “Morbid Obesity” given to me by my surgeon. I understand that the exclusion of part of my stomach and small intestine will make future evaluation of these organs difficult. I also understand that absorption of some substances such as iron and calcium will be reduced and require lifelong supplementation. I understand that my stomach pouch will be made very small and that the “bypass” of some of my intestine will prevent normal absorption of nutrients. Vomiting after the operation is possible and may require subsequent operation including reversal of the weight loss procedure. Pregnancy after the operation may be difficult to treat and vitamin supplementation **before** pregnancy is a must. I understand pregnancy during the period of weight loss is considered dangerous. There are risks associated with surgery in general that I understand. These include, but are not limited to, bleeding with need for transfusion, blood clots in the legs which can go to the lung, obstruction of the intestines in the future, infection in the abdomen or the lungs, scarring, pain, and need for further surgery. I understand the possibility of inadequate or too much weight loss. The risk of damage to intra-abdominal organs such as the spleen or intestines at the time of surgery may require their repair or removal. I am aware that the portions of the intestine that are sewn or stapled together may leak and that this is a major life-threatening problem. If a leak occurs, I may need further surgeries that may include reversal of the gastric bypass. I may have drains placed inside my abdomen that may need to be in place for a long period of time. There are risks of gallstones and needing further surgery or medication. It is possible to have rupture of the incision and require further surgery. Although uncommon, it is possible to die from the surgery and I accept this risk. Long-term risks include anemia, low protein, hair loss, peptic ulcer, and kidney stones. All of these risks have been explained to me and I have had time to contemplate their implications. I have had adequate time to ask my surgeon all questions I have and have had them answered to my satisfaction. I desire to proceed with the operation as planned.

Signature

Date