

Bariatric Patient Education Syllabus

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YOUR ROLE

You play a critical role in the long-term success of surgery. You will need to:

- Commit to improving your health
- Discuss your health history with your surgeon
- Discuss any questions or concerns you have. Learn all you can about the surgery before making a decision.
- Follow all instructions on preparing for surgery
- Commit to following all instructions given to you by your surgeon and nutritionist before surgery.

Both the bariatric team and you must commit to honesty, responsibility and cooperation.

CLINICALLY SEVERE OBESITY AND MEDICAL IMPACT

A clear definition of morbid obesity is very important, because this definition is used to guide physicians in selection of therapy for people who are overweight. Basically, one is clinically severe obese (morbidly obese) when he or she is so heavy that the fat tissue load creates (or will create) other medical problems.

Clinically severe obesity is a chronic condition that is very difficult to treat. Surgery to promote weight loss by restricting food intake or interrupting digestive processes is an option for clinically severe obese people. Roughly, individuals are usually morbidly obese if their weight is more than 100 pounds in excess of the Ideal Body Weight (IBW). However a more exact (and more widely accepted) way to define morbid obesity is to use the Body Mass Index (BMI). The BMI is calculated as follows:

$$\text{BMI} = \frac{\text{weight (kg)}}{\text{height (m}^2\text{)}}$$

Many weight loss websites have BMI calculators. Patients can simply enter their height and weight and calculate their BMI. The medical importance of morbid obesity is that people who are very obese have higher rates of medical problems, translating into greater need for weight loss and the rationale for more extreme measures (such as bariatric surgery) to control the weight. The medical complications of obesity may occur in moderately obese people but the frequency of these associated problems (such as heart disease, high blood pressure, diabetes, premature death, etc.) increases dramatically as weight increases. For example, very obese men between the ages of 25 and 35 have 12-fold greater risk of dying prematurely compared to their normal weight counterparts.

Medical conditions that are commonly caused or exacerbated by obesity are outlined by organ systems:

- **Pulmonary (related to lungs)** – Obstructive sleep apnea, obesity hypoventilation syndrome, asthma/reactive airway disease
- **Cardiac (related to heart)**– High blood pressure, heart failure caused by pulmonary hypertension, higher risk of coronary artery disease (atherosclerosis)
- **Gastrointestinal, Abdominal** – Gallbladder disease, GERD (recurrent heartburn), recurrent ventral hernias, fatty liver
- **Endocrine** – Diabetes, hirsutism, hyperlipidemia, hypercholesterolemia
- **Genito-urinary, Reproductive** – frequent urinary tract infections (UTI's), stress urinary incontinence, menstrual irregularity or infertility
- **Musculoskeletal** – degeneration of knees and hips, disc herniation, chronic non-surgical low back pain
- **Skin** – multiple disorders, most related to diabetes and yeast infections between skin folds
- **Cancer risk** – breast, uterine, prostate, renal, colon, pancreatic, gastric, gallbladder and endometrium.
- **Decreased Life Expectancy.** Morbidly obese patients live 10-15 years less than normal weight people.

A BMI above **40** indicates that a person is morbidly obese and therefore a candidate for bariatric surgery. Bariatric surgery may also be an option for people with a BMI between 35 and 40 who suffer from life-threatening cardiopulmonary problems or diabetes. However, as in other treatments for obesity, successful results depend mainly on motivation and behavior.

For nearly all people with clinically severe obesity, bariatric surgery is the standard of care. When other medically supervised methods have failed, bariatric surgery offers the best option of long-term weight control for those with clinically severe obesity. One of the most popular and successful surgical approaches is the Roux-en-Y gastric-bypass. Second most common weight loss operation in USA is Lap-band or adjustable gastric band.

Gastric-bypass surgery is a time-tested operation. It has been endorsed by a 1991 consensus panel convened by the National Institute of Health (NIH), as the only effective means of inducing significant long-term weight loss for the vast majority of patients with clinically severe obesity. Lapband was approved by FDA in June of 2001 and has been shown to help patients lose weight with lower risk of serious complications.

SETTING REALISTIC EXPECTATIONS

The goal of surgery is to help lose over half of your excess weight. This can reduce or prevent health problems. It's not cosmetic surgery. Keep in mind that:

- Other medically managed weight loss methods must be tried first and documented. Surgery is only an option if other methods have not been successful.
- Surgery is meant to be permanent. You will need to make lifestyle changes for the rest of your life.
- You must commit to making good food choices and being more active after surgery. Otherwise, you will not maximize your weight loss.
- You will not reach a healthy weight right away. Most of the weight is lost steadily over the first year and a half after surgery.
- The surgery is a tool, which will help you lose weight. However, by being diligent with exercise and attending support groups and workshops, your chances of losing more weight will dramatically increase.

PROMOTION OF WEIGHT LOSS WITH BARIATRIC SURGERY

Surgeons use techniques that produce weight loss primarily by limiting how much the stomach can hold. These restrictive procedures are often combined with

modified gastric-bypass procedures that somewhat limit calorie and nutrient absorption.

TWO WAYS SURGICAL PROCEDURES PROMOTE WEIGHT LOSS

1. By decreasing food intake (restriction). Gastric banding, gastric bypass, and vertical-banded gastroplasty are surgeries that limit the amount of food the stomach can hold by closing off or removing parts of the stomach. These operations also delay emptying of the stomach (gastric pouch)

→ Note: The majority of patients report feeling full and satisfied after a small amount of food, and not feeling excessively hungry most of the time. If much more than a quarter cup of food is eaten at once, the patient will feel uncomfortable and may vomit.

2. By causing food to be poorly digested and absorbed (malabsorption). In the gastric bypass procedure, a surgeon makes a direct connection from the stomach to a lower segment of the small intestine, bypassing the duodenum, and some of the jejunum.

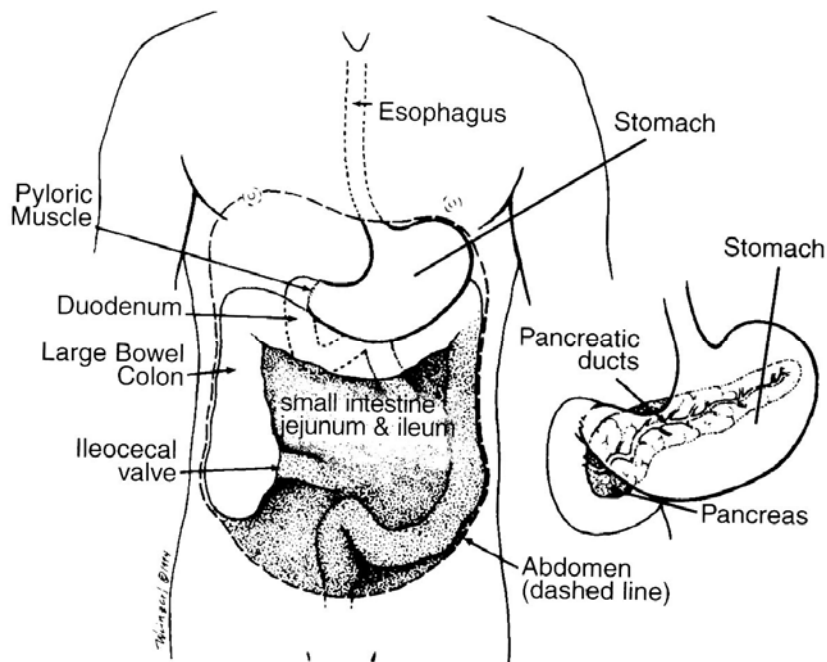
→ Note: Vitamin and mineral supplements and a high protein intake will be required for life to prevent the problem of nutritional deficiencies.

Although results of the operations using these procedures are more predictable and manageable, side effects persist for some patients.

EXPLORE THE BENEFITS AND RISKS GASTRIC-BYPASS SURGERY

BENEFITS	RISKS
<ul style="list-style-type: none">• Most patients lose weight rapidly and continue to do so until 18-24 months after the procedure• Significant sustained weight loss• Although many patients regain some of their weight after 24 months, few regain it all• Bariatric surgery improves or eliminates most obesity related conditions such as high blood pressure, high cholesterol, sleep apnea, and diabetes• Blood sugar levels for most patients with adult onset diabetes (type II) improve almost immediately and become completely normal within a year of surgery• Less osteoarthritis pain and improved mobility• Improved mood and self-esteem	<ul style="list-style-type: none">• 10-20% of patient who have open bariatric surgery require follow-up operations to correct complications (abdominal hernias are the most common)• Other possible post-surgical complications include infection, bleeding and death• More than 1/3 of gastric-bypass patients develop gallstones, which could lead to a laparoscopic procedure known as cholecystectomy to remove the gallbladder.• During rapid or substantial weight loss a person's risk of developing gallstones is increased. Gallstones can be prevented with supplemental bile salts taken for the first six months after surgery.• Nearly 30% of patients who have bariatric surgery develop nutritional deficiencies such as anemia, osteoporosis, and metabolic bone disease. These deficiencies can be avoided if lifelong vitamin and mineral intake are maintained• Dumping syndrome – caused by stomach contents moving too rapidly through the small intestine

→ Note: It is important to know that gastric bypass surgery **cannot be completely reversed**. The decision to have this procedure must be made in consultation with your surgeon, and a very careful consideration of the potential benefits and risks, and the lifelong consequences.



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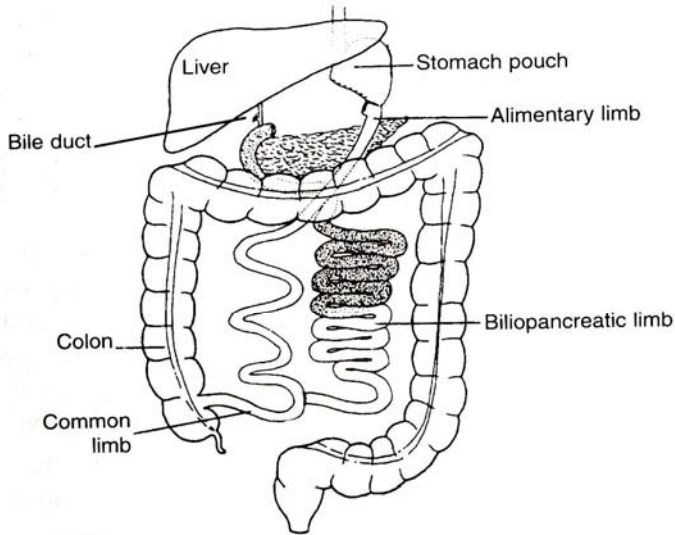
The human digestive system.

THE NORMAL DIGESTIVE PROCESS

Normally, as food moves along the digestive tract, appropriate digestive juices and enzymes arrive at the right place at the right time to digest and absorb calories and nutrients. After the chewing and swallowing the food, it moves down the esophagus to the stomach, where a strong acid continues the digestive process. The stomach can hold about three pints of food at one time. When the stomach contents move through the pylorus to the duodenum, the first segment of the intestine, bile and pancreatic juice speed up digestion. Most of the calcium and iron in the foods we eat is absorbed in the duodenum. The jejunum and ileum, the remaining two segments of the nearly 20 feet of small intestine, complete the absorption of almost all calories and nutrients. The food particles that cannot be digested in the small intestine are stored in the large intestine until eliminated.

MALABSORPTIVE PROCEDURES

Biliopancreatic Diversion and Duodenal Switch (DS)

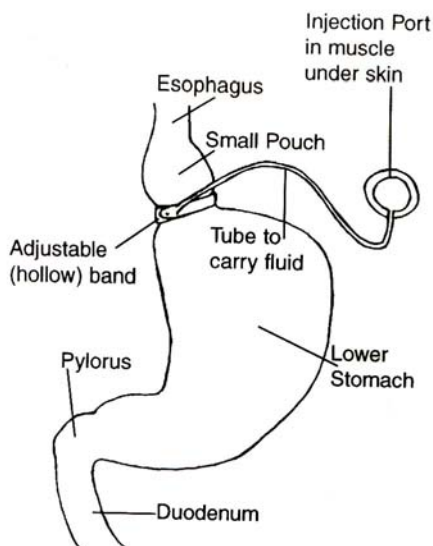


Biliopancreatic diversion.

The DS is more effective in achieving excellent weight loss in the extremely obese, but brings with it a higher rate of true malnutrition (malnutrition is very rare for those who undergo Gastric Bypass). In the DS, a sleeve resection of the stomach is performed by removing about 2/3 of the stomach, maintaining continuity of the gastric lesser curve. The small intestines are arranged so that the section where the food mixes with the

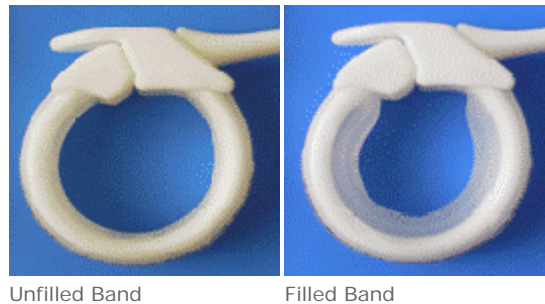
digestive juices is fairly short. No small intestine is defunctionalized and consistently, liver problems are much less frequent and the procedure essentially eliminates stomal ulcer and dumping syndrome. This operation is performed in about 5% of the cases in USA. Most bariatric surgeons do not prefer this operation because of the relatively high risk of complications.

RESTRICTIVE PROCEDURES (LAPBAND)



Laparoscopic Adjustable Gastric Banding or Lap-band is the **second most commonly performed operation for weight loss in USA**. This is a purely restrictive procedure. This operation has been popular in Europe, Australia and many Latin American countries for more than a decade. In many European countries, it is the most common weight loss operation. It was approved in USA by FDA in **June of 2001**. This operation also creates a small stomach pouch in the upper part of the stomach. However no staplers are used to staple or cut the stomach. In stead a silicon band is placed around the upper part of the

stomach, creating a small upper gastric pouch. The size of the stomach pouch is similar to the size of the pouch after gastric bypass surgery. The band has a balloon on the inner surface which is connected to a reservoir through a tubing. The band is placed around the stomach in an empty state. The patient returns to the office a few weeks after surgery. At that point the surgeon starts gradually filling the band with saline solution. Small amount of saline is added to the band reservoir every few weeks. The 'filling procedure' is usually performed on bedside in the office. In a small number of patients, the reservoir can not be felt through the skin and filling may need to be performed in the x-ray department. The procedure takes 10-15 minutes and involves very little pain. Each filling narrows the opening of the stomach pouch. This helps the patient feel full with smaller amount of food. Most patients reach an adequate filling volume by the end of the year and need only an occasional filling after that (once or twice a year).



There are several reasons for the recent popularity of Lap-band procedure.

- It is a lot less invasive procedure than most other weight loss operations including gastric bypass surgery.
- It is almost always performed using a laparoscopic approach which means smaller scars, less pain and faster recovery.
- Most patients can be discharged same day after surgery or stay in the hospital over night and go back to work or their preoperative activities in 1 to 2 weeks.
- It is a reversible procedure.
- The weight loss with lap-band can be fine tuned by filling the band.
- The band is supposed to stay in the patient for ever and help with weight loss. However if the weight loss is not satisfactory or the procedure leads to complications, the band can be removed any time and converted to gastric bypass.
- The lap-band procedure does not completely disconnect the stomach pouch from the remnant stomach. As a result if a disease develops in the remnant stomach or first part of the small bowel (the parts which are bypassed during gastric bypass), it is still possible to diagnose and treat those problems using upper endoscopy (EGD). Upper endoscopy is not possible after other weight loss operations including gastric bypass surgery without performing an abdominal operation.

Complications of Lap-Band

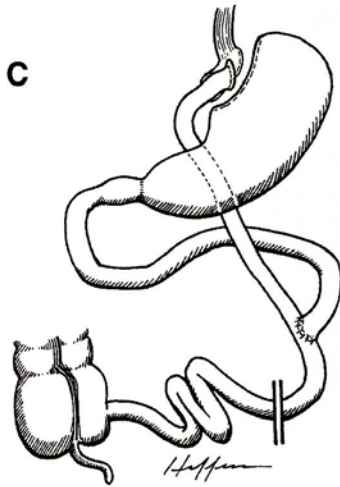
Lap-band is not free of complications. The risk of complications is low and they are different from the complications of gastric bypass. Here is a list of lap-band complications.

- **Slippage:**The band can slip down the body of the stomach. The risk is highest during the first 3 weeks. It is absolutely important to avoid solid food and severe nausea during that period. If the band slips, it can be diagnosed with an upper GI series or EGD (upper endoscopy). Most of the time, a slipped band can be repositioned with a laparoscopic procedure similar to the original procedure. The band has to be removed and replaced with a new band.
- **Erosion:**The band can erode into the stomach. It usually happens slowly over a long period of time. The usual presentation is a patient who initially did well and lost a good amount of weight but then started putting weight back on. Again an Upper endoscopy (EGD) can confirm the erosion. In case of an erosion, the band needs to be removed and removal can usually be performed using a laparoscopic technique. The band site is allowed to heal over the next few weeks. After that, a new band can be placed or the procedure can be converted to gastric bypass.
- **Port site infection:**The port site can become infected. Most infections can be treated with antibiotics. However if antibiotics can not eradicate the infection, the port may need to be removed and the port site allowed to heal over the next few weeks. At that point a new port can be placed.
- Other complications include but are not limited to bleeding, damage to surrounding structures and esophageal dilatation. The risk of complications has reduced over the last 5 to 10 years.
- The risk of dying from lap-band is 10 times less than gastric bypass or most other weight loss operations. The risk of a leak from the stomach is extremely low and complications related to the bypass are non existent.

It is also important to understand that weight loss after lap-band is slower than gastric bypass. Patients usually lose 1-3 lbs per week. The rate of weight loss is roughly half the rate of gastric bypass. However a slower weight loss is not necessarily bad. Some studies have also shown that weight loss after lap-band continues up to 5 years as opposed to 18 months after gastric bypass. On the average patients can expect to lose 30-60% of excess weight over a period of 5 years after lap-band. Individual results vary. For more information about lap-band, please visit www.lap-band.com.

Gastric Bypass and Lap-Band are the two procedures performed at Hamot Medical Center for weight loss. [Dr Rodolfo Arreola](#) performs laparoscopic and open Roux-N-Y gastric bypass procedures. [Dr Amjad Ali](#) performs open and laparoscopic Roux-N-Y gastric bypass procedures and lap-band procedures. We try to individualize the surgical treatment of morbid obesity based on patient's medical background, food and exercise habits and expectations of weight loss. Some insurance plans do not cover lapband. You can call your insurance plan to verify if weight loss surgery is covered and what procedures are covered under your plan.

COMBINATION PROCEDURES



The **Roux-en-Y Gastric-bypass** can be regarded as a restrictive procedure; however, there is some malabsorption due to bypassing food around the duodenum and the initial part of the jejunum. The risk for pouch stretching, breakdown of the staple lines, and leakage of stomach contents into the abdomen are about the same for Gastric-bypass as for vertical banded gastroplasty. However, because Gastric-bypass causes food to skip the duodenum, where most iron and calcium are absorbed, risks for nutritional deficiencies are higher. Anemia may result from malabsorption

of vitamin B12 and iron in menstruating women, and decreased absorption of calcium may bring on osteoporosis and metabolic bone disease. Patients are required to take life-long nutritional supplements that usually prevent these deficiencies. Gastric-bypass may cause dumping syndrome, whereby stomach contents move too rapidly through the small intestine. Symptoms include nausea, weakness, sweating, faintness, and, occasionally, diarrhea after eating, as well as the inability to eat sweets without becoming so weak and sweaty that the patient must lie down until the symptoms pass.



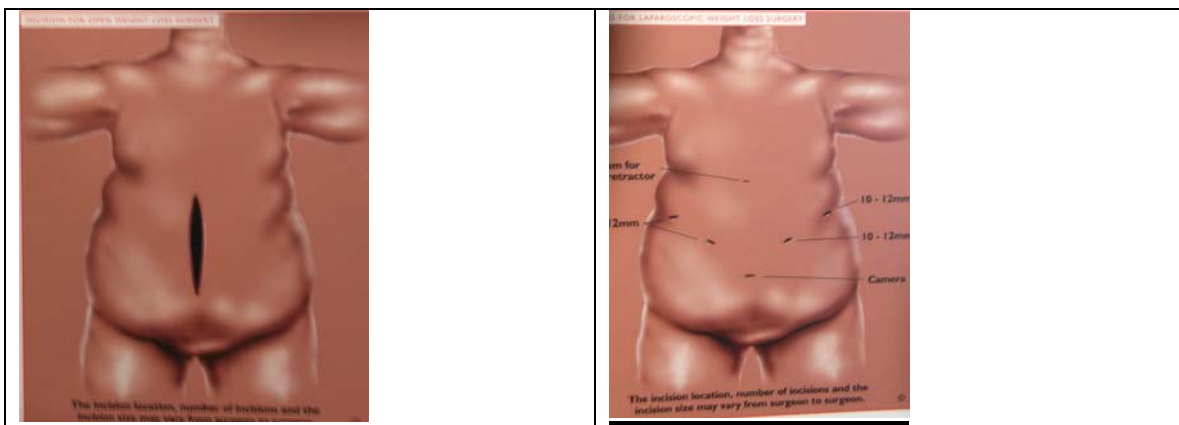
ROUX-EN-Y GASTRIC BYPASS

Description of the procedure (surgical technique may vary)

1. **EXPLORATION OF THE ABDOMEN** – after the abdomen is entered (with an open incision or laparoscopically using a viewing telescope and small 5 to 15mm trocars, or tubes, through which surgical instruments are passed into the abdomen), the surgeon makes a quick check to be sure that no obvious anatomic abnormalities are present. Particular attention is given to the gallbladder and the uterus/ovaries. In open cases, the gallbladder is felt to determine if it contains gallstones, and if so, the gallbladder is removed later in operation. In laparoscopic

cases, an ultrasound is done before surgery to tell if gallstones are present. A cholecystectomy may be planned if the ultrasound shows gallstones.

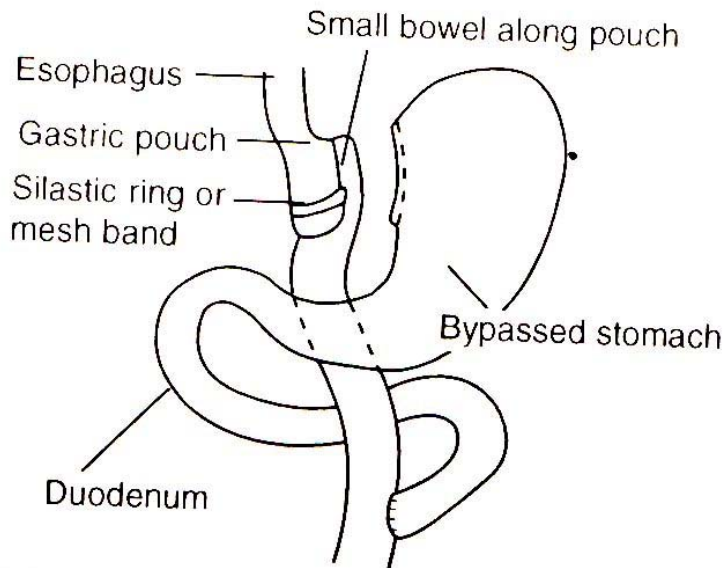
2. **CREATION OF THE ROUX LIMB** –This part of the procedure is done by dividing the small intestine 15 to 40 cm downstream from the ligament of Treitz (where the jejunum begins). The length of the Roux limb is measured, which is the segment that will attach to the stomach pouch later in the operation. The “standard” length of the Roux limb is 75 cm. Sometimes, a longer Roux limb is measured in heavier patients.
3. **DIVISION OF THE STOMACH** – the stomach is cut, using a device that simultaneously divides the tissue and places staples to seal the tissue on each side of the cut. The aim is to create a tiny stomach pouch that is 15 to 20 ml in size, in other words creating a cuff of stomach on the bottom end of the esophagus.
4. **FORMATION OF THE GASTROJEJUNAL ANASTOMOSIS (ATTACHMENT OF STOMACH “GASTRO” TO THE SMALL INTESTINAL ROUX LIMB”JEJUNAL”)** – this maneuver is the key part of the entire operation; it must be accomplished with the highest possible level of security. This “hookup” must have excellent blood supply and must not have any tension remaining on it at the completion of the operation. A stapling device is used to create this connection
5. **OTHER PROCEDURES, OR DRAINS** – cholecystectomy, tubal ligation, and placement of gastrostomy (stomach tube) or liver biopsy are done at the end of the operation as necessary and discussed with the patient. The surgeon usually places a plastic drainage tube near the gastro-jejunal anastomosis, to serve as a “sentinel” for a leak in this area and potentially to aid in therapy if a leak occurs.
6. **CLOSING OF TROCHAR SITES AND SKIN** – Whether a larger incision for open Gastric-bypass or several small incisions for the laparoscopic Gastric-bypass have been made, the muscle defects are often closed by suture that is absorbable (stitches do not need to be cut out later). The skin incisions are then closed with suture, steri-strips® or stapes, depending on the surgeon’s preference.



INCISION FOR OPEN GBP

INCISIONS FOR LAPAROSCOPIC GASTRIC
BYPASS

Modifications of Gastric Bypass:



**Banded
gastric bypass.**

Over the years, surgeons have tried to improve the results of gastric bypass procedure even more by making a few changes in the procedure. Most of these changes are minor. In the beginning, the stomach was stapled and not divided. Later studies showed better results when the stomach was stapled and divided. Therefore that has become the most common technique over the last 10-15 years. Some

surgeons place a ring around the gastric pouch to prevent the outlet of the pouch from getting larger with time. Some studies have shown better long term weight loss results with this technique. However the ring can also cause complications in a very small number of patients. Some surgeons place a marker on the big stomach that can help find the position of the big stomach during CT scanning and facilitate future evaluation in the rare situation when it may be needed. The placement of such a ring does not affect the amount of weight loss.

BARIATRIC SURGERY – AN OVERVIEW OF PROCEDURES

	PROCEDURE	PROS	CONS
MALABSORPTIVE	<ul style="list-style-type: none"> Biliopancreatic Diversion (BPD) and Duodenal Switch (DS) 	<p>Greater sustained weight loss with less dietary compliance</p>	<ul style="list-style-type: none"> Increased risk of malnutrition and vitamin deficiency Constant follow-up to monitor increased risk Intermittent diarrhea and/or foul smelling stool
RESTRICTIVE	<ul style="list-style-type: none"> Adjustable Band Gastroplasty (LAP-BAND®) 	<ul style="list-style-type: none"> Less invasive operation No protein-calorie mal-absorption No vitamin or mineral deficiencies due to mal-absorption 	<ul style="list-style-type: none"> Slower weight loss. Significant dietary compliance required Small risk of band erosion, band slippage and port site infection, need for conversion to gastric bypass.
COMBINATION	Roux-en-Y Gastric-Bypass	<ul style="list-style-type: none"> Sustained weight loss with limited dietary compliance Can be performed via laparoscope 	<ul style="list-style-type: none"> Limited B-Vitamin, Ca and Iron absorption Gradual weight gain over 15 years

EXPECTED WEIGHT LOSS AFTER WEIGHT LOSS SURGERY

Weight loss surgery can successfully start patients on the road to recovery from clinically severe obesity, but **surgery alone will not ensure long-term success. Surgery is a tool**, something to help patients do the work. In order to get down to a healthy weight, patients must adjust their eating habits and exercise patterns.

Most patients lose near half of their excess weight in the first year after gastric bypass and continue to lose weight after this point. Patients usually reach their

lowest weight at 18-24 months after gastric bypass. **There is no amount of weight loss that is guaranteed.** Weight control is the personal responsibility of the patient. Usually patients regain 10-15% of their weight during the next 5-7 years. Weight loss is slower after lapband. Your goal is to lose 1-3 pounds per week or 4-12 lbs per month after lapband. However weight loss continues for 4-5 years. Average weight loss with lapband at the end of 5-6 years is about 50-55% of the excess weight.

Successful habits include eating three small, well-balanced meals, and a maximum of one snack a day. Carbonated, caffeinated or sugary beverages, and alcohol, should be avoided. Patients tend to gain weight back if they start eating larger portions, graze, consume high fat or “junk” foods, or drink high-calorie beverages.

A program of regular exercise is very important for promoting and maintaining weight loss. Studies have shown that patients who exercise 45 minutes at least three times per week lose an average of 18% more excess weight than patients who do not exercise regularly.

Over 50% of patients achieve good to excellent weight loss results following gastric-bypass surgery. Expected weight loss is 55-75% of the excess weight. More weight has been shown to be lost by patient who participated in an extensive after-care program. However, this success depends entirely on following a very restricted diet for the rest of their lives, and making major lifestyle changes. Gastric Bypass is a helpful tool.

There are several long term habits that successful patients can adopt and the first post-operative year is a critical time that must be dedicated to changing old behavior and forming new, lifelong habits. The success of weight loss surgery is most commonly defined by the total weight loss during the initial weight loss phase. However, foremost in the minds of patients undergoing surgery for morbid obesity are the questions:

- “Will this be a long-term permanent solution?”
- “What can I do to insure my lifelong success?”

In other words, how can I maintain at least 74% of my initial excess weight loss after a successful gastric bypass?

Patients should take personal responsibility for staying in control. Patients have a general feeling that maintaining their weight was indeed their own responsibility and that surgery was a tool they used to reach and maintain a healthy weight.

Lack of exercise, poorly balanced meals, constant grazing and snacking, and drinking carbonated beverages are the basic causes of not maintaining weight

loss. Regular attendance of support groups and workshops greatly increases patients' compliance with the recommendations for optimal weight loss and maintenance.

DIET

After weight loss surgery, the patients must carefully follow the recommendations of the surgeon and nutritionist for the rest of their life in order to maximize their weight loss success. You will need to take a protein supplement to ensure proper post-operative nutrition for the first 3-6 months. It is essential that you take **daily multivitamins and mineral supplementations for the rest of your life** in order to achieve optimal post-operative nutrition. Post-operative diets are separated into stages I, II and III and IV. Please refer to the bariatric nutritionist's handout for details of your diet after surgery.

NUTRITIONAL EXPECTATIONS

After weight loss surgery, you will need to make changes to your eating patterns. The diet after surgery progresses from a liquid diet to a pureed diet to a soft diet and then a modified regular diet. The diet progression is designed to allow your body to heal. Initially, it will help you meet your protein and liquid requirements, and later, to assist you in meeting your nutritional needs. It is imperative that you follow the diet's progression and adhere to this regimen to maximize healing and minimize the risk for unnecessary complications. **The size of your stomach pouch is about one ounce or one to two tablespoons.** At first your capacity will be somewhat limited, so be patient. You may find that two to three teaspoons of food fill you up. This is expected. You may also find that you are able to eat more of one type of food than another. That is okay, too. Over time, your food pouch will stretch. By six months after surgery, it may stretch to eight ounces or one cup. Long term, the size of your pouch is likely to be eight to twelve ounces or 1 to 1 ½ cups. This will limit the amount of food you can eat at one time.

One of the changes that patients often comment about is the concept of "wasting food". After surgery your eyes and head still work the same way as they did before. However, because of the new stomach pouch, you will be satisfied with much less. It is critical that you listen to your body's signals of fullness and not to your eyes that see food left on your plate.

You may also be surprised at how the surgery changes your wants and desires for certain foods. Foods you may have previously loved you may now find you are less interested in.

It is common to see some variation from program to program related to nutrition. Just as there are many food options, there are many options and preferences post-operatively. However, most programs agree that the primary source of nutrition should be protein. 70 to 75 % of all calories consumed should be protein based (eggs, fish, meat, etc). Carbohydrates (bread, potatoes, etc.) should make up only 10 to 20 %, and fats (butter, cheese, etc.) only 5 to 15 % of the calories that you eat. A diet consisting of 600 to 800 calories and **75 grams of protein** should be the goal for the first 6 months. Protein drinks can be helpful to fulfill your protein requirements. There are many to choose from. Look for protein drinks that are low calorie and low sugar and that have a good taste. You should stop protein drinks 3-6 months after surgery or when you are able to tolerate most foods containing proteins. This will help avoid extra calories in your diet.

Avoid foods which contain sugar. Not only will they slow down your weight loss, but they can make you sick after gastric bypass. Sugar may cause “dumping syndrome” in patients who have had the gastric bypass procedure. Dumping, in short, is when sugars go directly from your stomach pouch into the small intestine causing heart palpitations, nausea, abdominal pain, and diarrhea. Symptoms may vary among patients. Dumping lasts about 30 minutes to an hour.

To maintain a healthy weight and to prevent weight gain, you must develop and keep healthy eating habits. You will need to be aware of the volume of food that you can tolerate at one time and make healthy food choices to **ensure maximum nutrition in minimum volume**. A remarkable effect of Bariatric surgery is the progressive change in attitudes towards eating. Patients begin to eat to live – they no longer live to eat. As well, exercise must be part of your daily routine.

GENERAL RECOMMENDATIONS

1. Do not drink liquids with meals. Drink fluids before the meal. Then wait one hour after meals before resuming fluids to prevent pouch stretching and vomiting
2. Eat three tiny, protein-focused meals per day at regular times, sitting at a table. Eat slowly, savoring your food. Do not eat when feeling rushed or stressed as this may cause gastric upset.
3. Stop eating when feeling full or if feeling any discomfort.

-
4. Always cut food into small pieces and chew food very well to prevent blockage. If food should stick, try a teaspoon of *Adolf's Meat Tenderizer* in a glass of warm water, sipped slowly.
 5. Concentrate on eating protein rich foods such as fish and seafood, cheese, eggs, and poultry. At mealtime, eat protein foods first before any other food.
 6. Do not snack between meals.
 7. Avoid very sweet food, candy, chocolate, and high-sugar beverages to prevent the unpleasant effects of dumping syndrome.
 8. Sip liquids slowly, drinking at least ½ cup every hour between meals to total 8 eight ounce cups per day to avoid dehydration.
 9. Minimize alcohol intake as it is high in calories, may cause an ulcer, and the effects may be felt much more quickly.
 10. Take a multivitamin supplement, B12 vitamin and calcium every day.

FOODS THAT MAY BE DIFFICULT TO TOLERATE:

- Bread products
- Cow milk products
- Pasta products
- Fatty foods and fried foods
- Candy, chocolate, any sugary foods and beverages
- Carbonated beverages
- Bran cereal and other bran products
- Corn, whole beans, and peas
- Dried fruits and skins of fresh fruit
- Coconut

NOTES:
