

Patient Information booklet

Surgery for Treatment of Morbid Obesity

Central Valley

Bariatrics

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DISCLAIMER:

The information provided here in this booklet is not intended to be comprehensive and is to supplement, not replace the expertise or professional judgment of your physician. Every patient should be evaluated individually and a care plan be tailored based on each persons unique history and physical exam.

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Introduction:

Morbid Obesity presents a major health threat to our society. This is because of the many medical illnesses that are associated with it. These illnesses include hypertension, diabetes, heart failure, sleep apnea, thrombophlebitis, pulmonary embolism, hyperlipidemia, asthma, hypercholesterosis, degenerative arthritis, pseudotumor cerebri, depression, venous stasis ulcer of the legs, infertility (in young women), and skin infections, to name a few. The illnesses associated with morbid obesity increase the risk of premature death significantly. Some estimate that more than 30% of the US population is affected by some degree of obesity.

There are a number of surgical procedures available today for the treatment of morbid obesity. Stomach stapling (the most common procedure performed) within the last five years, is shown to have a high failure rate. This particular procedure, along with the Roux-en-Y (Gastric Bypass), merely limited food intake. The GRDS (Gastric Reduction/Duodenal Switch) is a type of gastric bypass, but with major improvements. The pyloric valve is preserved (unlike Gastric Bypass), thus there is no dumping syndrome. The stomach is not reduced as much as it is in the RNY and will stretch to approximately one-half its original size in about 12-18 months, thus allowing normal quantity of food intake. There is no ulceration at the stoma site, because unlike in the RNY, the stomach functions normally. The bypassed small bowel allows reduced absorption of calories while allowing proper nutritional absorption. This procedure has been performed for many years. Table 1 (pages 15-16) highlights the differences between the major weight loss surgical procedures.

Definitions

A consensus conference was organized by The National Institute of Health in 1985 to study the health implications of obesity. Prior to this conference there were no uniform definitions for morbid obesity. The NIH consensus conference standardized the terminology and the definitions.

Body Mass Index (BMI) is a number that can be calculated by the following:

$$\text{BMI} = \frac{\text{Weight (Kg)}}{\text{Height (m)} \times \text{Height (m)}}$$

In general, BMI < 25 is healthy. A BMI > 25 is indication of obesity, and a patient with BMI > 35 is considered morbidly obese.

Gastric Reduction/ Duodenal Switch (GRDS)

is the most physiologic of all the operations performed for the treatment of morbid obesity.

This operation is also known as *Distal Gastric Bypass-Duodenal Switch* in some centers.

Causes of Obesity

One of the most common misconceptions about body weight is that it is not a physiologically regulated variable, but is set by acquired food habits. Scientists now know there are a multitude of factors controlling ones body weight. Genetic, environmental factors, emotional trauma, regulatory chemicals, hormones and activity level all play a role in body weight regulation. However, this is not to downplay the importance of a healthy and non excessive diet. Obesity is an imbalance of regulations between energy intake and energy expenditure. When intake is greater than expenditure, the body stores the excess energy in the form of fat. Obese people regulate their intake and expenditure around an elevated set point.

Risks Of Obesity

Weight reduction may be life saving in patients who suffer from morbid obesity. The list of illnesses on page ten represent only a fraction of the diseases that are thought to be associated with obesity. Most of the associated illnesses either improve, cease to worsen, or in some cases cease to exist once the excess body weight is lost.

A morbidly obese patient may have a mortality rate that is 1200 percent higher than that of a similar age, “normal” weight person. The greater the amount of excess weight, the higher the mortality rate.

Pregnancy

Pregnancy causes significant stress and nutritional requirements in the body. We ask that female patients prevent pregnancy for at least 18 months after surgery. This is the time of rapid weight loss and would **not** be conducive to maintaining the health of a growing fetus.

We ask that our female patients use two forms of birth control, such as barrier and chemical forms of birth control or barrier and pill forms of birth control during the weight loss period . After this initial 18 months your meal portions should be normalized and your nutritional status adequate to sustain health for a growing fetus.

Disease and Illnesses Of Obesity

- Hypertension, Coronary Artery Disease, Congestive Heart Failure
- Sleep Apnea, Asthma, Hypoventilation Syndrome, Chronic Obstructive Disease
 - Diabetes Mellitus
 - Gastroesophageal Reflux Disease
- Degenerative Osteoarthritis, Disc Herniation
 - Skin Infection
 - Depression, Psychosocial Impairment
- Prostate, Colon, Breast, Ovarian, Uterine Carcinomas
- Hypercholesterolemia and Dyslipidosis
- Thrombophlebitis and Pulmonary Embolism
 - Hormonal imbalances and infertility
 - Pseudotumor cerebri

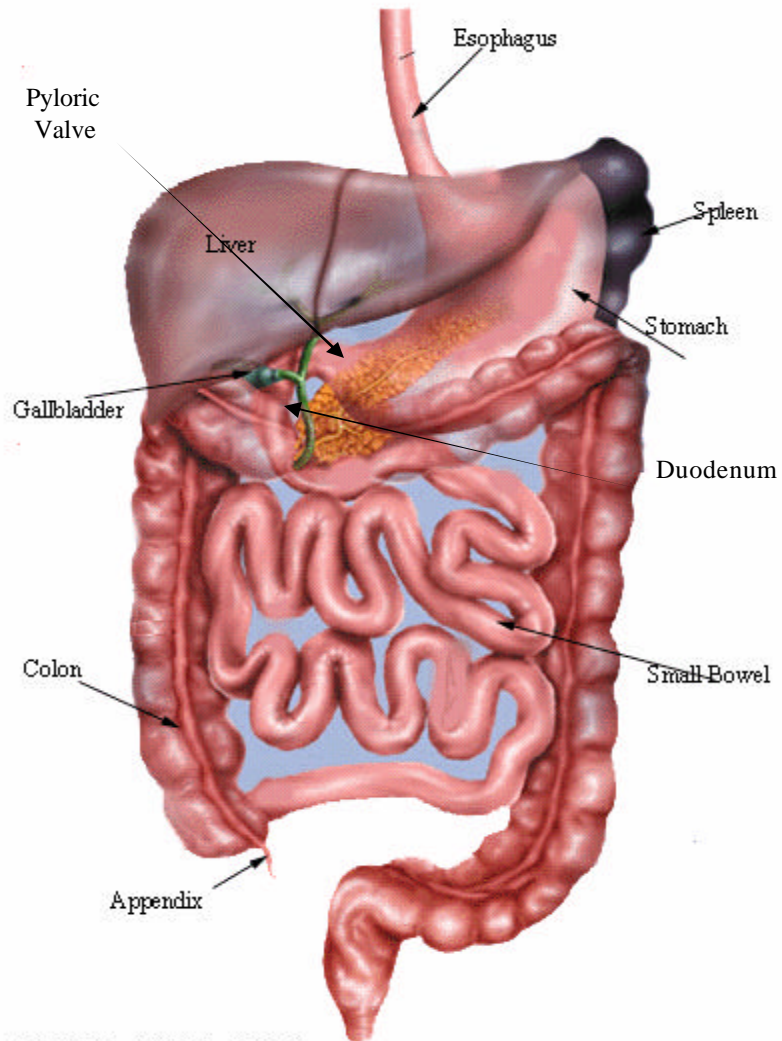
Why Surgery?

The medical management of weight loss has a very limited success rate in treating morbid obesity. Most patients regain the lost weight with cessation of a chosen diet plan. Some try multiple diet plans but this eventually leads to frustration and hopelessness, because of the failure to keep off the excess weight. Both, over the counter and prescription drugs for treatment of obesity, have serious side effects; in fact some of these medications are harmful in patients who have a number of the listed obesity associated illnesses.

For a patient, the accumulated cost of health care for the illnesses associated with obesity, as well as, the loss of productivity over the years is staggering. This includes physical, psychological and monetary tolls on the patient and their families. The ideal treatment for a morbidly obese patient should carry less risk than the disease of obesity itself. It should also provide a long lasting weight loss balance.

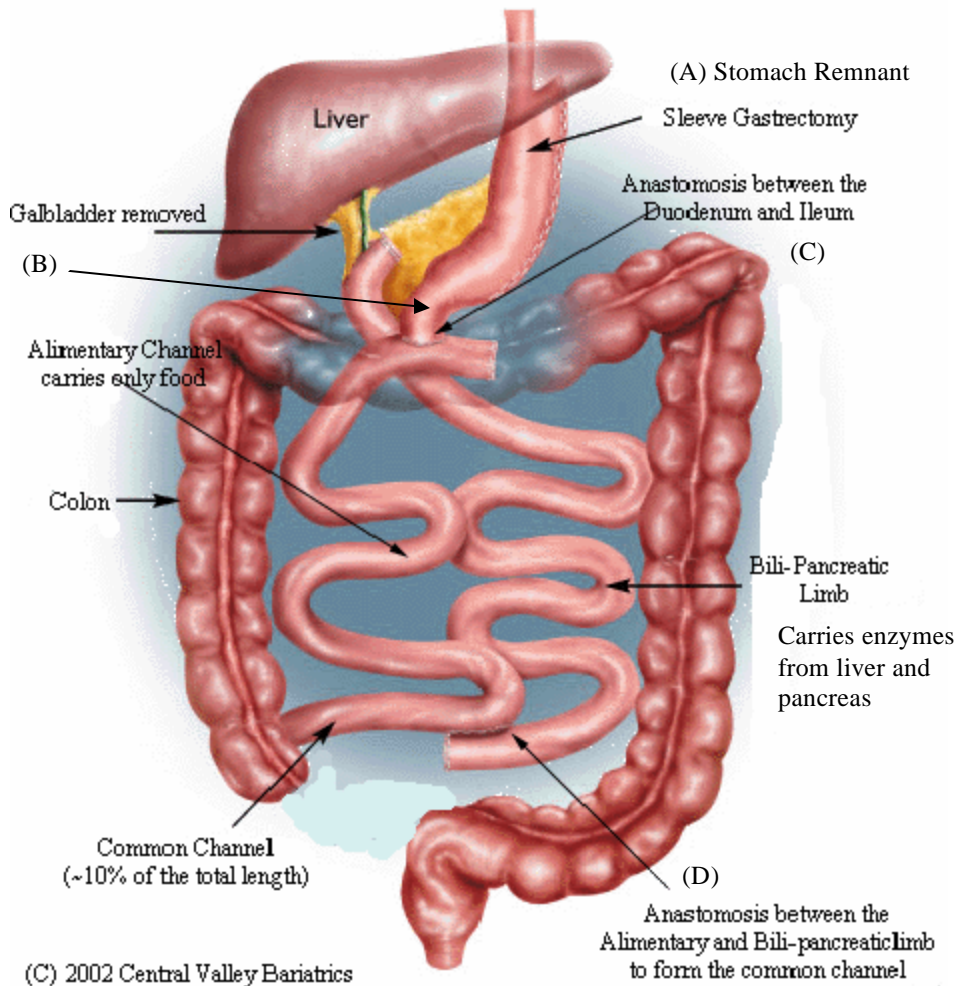
Over the years many types of operations have been performed for the treatment of morbid obesity. The underlying approach for most of these operations was either, reduce food intake by reducing the size of the stomach, or limiting absorption of the calories by diverting oral intake away from the absorptive enzymes of the pancreas and liver. Most of these procedures were, to some degree or another, associated with some complications both surgical and metabolic. GRDS is a hybrid operation where the oral intake is limited by reducing the size of the stomach and absorption of calories is limited in the most physiologic way possible.

Normal Anatomy-Before Surgery



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DS Anatomy After Surgery



Normal Physiology

Before surgery, the food taken by mouth is partially mechanically and chemically broken down in the stomach. The pylorus acts as a gate and controls the flow of ingested food from the stomach into the duodenum. When the pylorus opens, this allows mixing of the digestive enzyme from the pancreas and bile from the liver with food moving down from the stomach. From this point on, through the entire small bowel, the food particles are broken down to different elements and are absorbed. There is approximately 750 cm of small bowel where absorption takes place. Different minerals and vitamins are also absorbed along different segments of the small bowel. The particles, which include forms of sugar, fat, and protein, are then used as energy or stored as fat for later use.

How the surgery works

The operation is designed to accomplish three goals: 1-limit the amount of food ingested, 2-limit absorption of the food taken in, and 3-maintain the function of the pylorus. The preservation of the pyloric function is a crucial part of this operation.

To accomplish these goals the stomach size is reduced by removing approximately 70-80% (A) of the stomach. The duodenum is then divided leaving the pylorus attached to the stomach (B). The small bowel is divided into two segments. The segment that is connected to the colon is sutured to the segment of the duodenum that is attached to the stomach (C). The other segment of the small bowel, that is in continuation with the divided duodenum, is sutured to the small bowel approximately 75-100 cm from the colon (D). The common channel where the absorption takes place now is only 75-100 cm. The appendix and the gall bladder are also removed. No small bowel is removed. The small bowel now consists of two segments. One segment (approximately 40% of the total bowel length) is connected to the part of the duodenum attached to the pylorus and stomach and carries food to the common channel. The other segment carries the biliary and pancreatic juices to the common channel.

How the surgery works (cont.)

After the surgery, ingested food is not only of smaller volume, but also is absorbed in smaller amounts. However, the way this is accomplished is different from many of the other operations that are offered elsewhere. We preserve the function of the pylorus, thus significantly reducing the dreaded complication of dumping syndrome. The symptoms of dumping syndrome range from the urge of an explosive watery bowel movement very shortly after having a meal to heart palpitations and dizziness.

Since the size of the stomach is reduced, there is significant weight loss in the first 6-8 months after the operation. The weight continues to be lost for a total of 12-18 months after the operation at which time, in most cases, it stabilizes. It is imperative to bare in mind that this is not a magical solution to ones obesity problem. Patients will need to avoid high calorie and high sugar containing “junk food”, and not only eat healthy, but also maintain a regular exercise schedule.

Once some of the weight is shed, most patients feel energized, so much so that it becomes easier to increase and maintain a higher level of activity.

Type of operation	VBG	RYN, Gastric Bypass, Roux-en-Y, LAR, RNY	Duodenal Switch (DS), BPD-DS
Modality of Weight Loss	Restrictive	Restrictive	Restrictive and malabsorptive.
Description	A silastic ring is used to create a small pouch of stomach.	A very small pouch of fundus connected to a limb of small bowel. Pyloric Valve bypassed.	Sleeve gastrectomy, with ~8 ounce pouch. Pyloric valve functional. Biliopancreatic secretions kept separated from food to limit absorption except the last ~75cm of small bowel.
Long term success	Poor: Only 26% of patients maintain >50% of excess weight (1)	Average: 60-70% Peak results 18-24 months (2),(3),(4),(5) >30% regained >15% or lost <50% (6)	Above Average: 70-80% excess weight loss reported over long term follow up. (7),(8),(9),(10),(11)
Complications Non Surgical	21% Vomit more that once a week. 14% have heartburn Binging and purging very common secondary to pain.	68.8% "continued" problem with vomiting, 42.7% plugging of the gastric pouch outlet. (12) 12% stenosis & 12% ulceration, with over all stomach complication in 20% (13). Up to 76% of Patients develop Dumping Syndrome, with no association between severity of Dumping Syndrome and weight loss. (14)	Fat soluble vitamin deficiency; Rarely seen with adequate dietary supplements, in addition to a normal healthy diet. Protein malabsorption. Again with healthy well balanced diet far less common than seen in VBG or RNY patients with stenosis or who only consume high sugar/caloric drinks.
Opinion	Poor long term results with VBG. (15)	"Gold standard" with frequent complications and hospital visits for patients. (8)	Technically a difficult operation to perform. Division of the post pyloric duodenum is a difficult step and could be dangerous in an inexperienced hand.
Summary	A restrictive operation with poor long term track record and numerous complications.	A restrictive procedure rendering a patient to a very limited diet, with significant complications. Long term results acceptable.	The best surgical solution available for treatment of Morbid obesity. Allows a patient to lead a normal life with normal dietary intake of meals in smaller volume, without the side effect of dumping syndrome, continued vomiting, plugging, etc.
Long term dietary modification	Extremely poor diet: Patients are not able to consume any solids since it plugs the opening at the silastic ring.	Significant dietary restriction. The unhealthiest diet after any weight loss surgery. Meat intolerance in majority of Pt. (16) Patients resort to high caloric drinks because they can not tolerate "regular" meals	Most balanced diets tolerated well with no adverse effects. Patients tolerate "normal" diet.
Nutritional Supplement May differ among physicians/patients..	Multivitamin, Iron, Calcium for life	Multivitamin, Iron, B12, Calcium for life	Multivitamin and Calcium for life.

Table 1

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Table 1-References

Who is a Candidate for this surgery

There are clearly defined guidelines for selection of those obese patients who may be candidates for this operation. These guidelines include:

- BMI>40 or BMI>35 with co-morbidities (see page 8).
- Medically be able to tolerate the surgery.
- Psychologically understand and be able to cope with the changes that the surgery will bring on to them.
 - Ages between 18 and 65. Others outside this range will be considered individually.
 - Be able and willing to participate actively in their care, including post-operative office visits, as well as, monthly meetings as required.
- Follow the instructions, including the dietary modification, as well as any exercise plan prescribed to them.
 - Be able to fully understand the potential risks and complications, as well as the options available to them before consenting to the surgery.
- Alcoholism excludes one from having this operation.

Open or Laparoscopic Approach

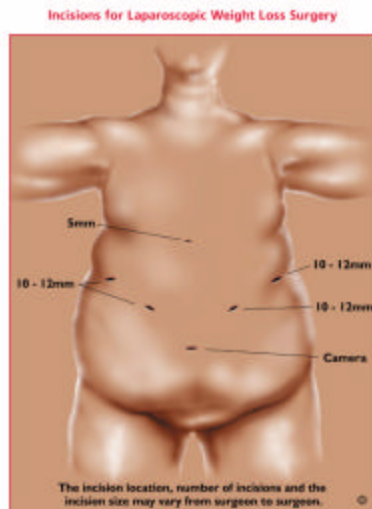
The Open surgical approach is the most common incision technique for the GRDS procedure. The Open approach entails making an incision from just under the breast bone (xiphoid process) to approximately an inch above the belly button (umbilicus). The average incision is approximately 6-7 inches in most people.

There are positives and negatives to both surgical approaches. The Open approach takes less time and therefore the patient is under anesthesia for a lesser amount of time. The time under anesthesia is an important consideration for the patient's recovery and health. Research has shown that there are less anesthesia complications with a shorter time under anesthesia. It also gives the surgery a better overall view of the abdominal cavity and the entire procedure. The Open approach does have a higher rate of hernia formation, possibly increased pain, more wound complications and possibly higher pulmonary complications, such as pneumonia.



Open or Laparoscopic Approach

The Laparoscopic Approach is only offered to patients who meets laparoscopic guidelines. These guidelines are set for the safety of the patient. Laparoscopic candidates are people who have not had previous abdominal surgery, have no cardiac or pulmonary complications, and have a particular body shape. Laparoscopic surgery is done by making approximately five one inch incision in several areas on the abdominal wall and one 3-4 inch incision below the belly button (umbilicus). The abdominal wall is then elevated by the additional of carbodioxide into the abdominal cavity. A camera is then inserted into the abdominal cavity as are the other laparoscopic instruments. There are also positives and negatives to the laparoscopic approach. The laparoscopic approach takes long which means the patient is under anesthesia longer. There is a decrease in the field of vision for the surgeon and the assistant. There are fewer hernia formations and less wound complications with the laparoscopic approach. There is also the possibility of less recovery time because of less post operative pain.



Insurance Coverage

Insurance Approval—most insurance companies will cover weight loss surgery for morbid obesity with medical necessity. Issues of contracted providers, out of network benefits, denials, appeals or cash paying patients will be individually discussed.

Pre-Operative Assessment

Your initial appointment will be to get a history and physical examination and a significant amount of time will also be spent on education, a detailed discussion of the surgical procedures for weight loss, specifically on the Duodenal Switch operation. There will be a detailed discussion of the risks associated with the surgery. The average initial visit will last 3-5 hours, please plan accordingly.

After your initial visit, a letter will be sent to your insurance carrier for authorization. Once you have been authorized, you will need to see a medical specialist for anesthesia clearance for surgery. This may be done by a cardiologist, pulmonary specialist, or primary care physician. A psychological evaluation will also be required to determine competency, compliance and screening for postoperative difficulties.

You will see your surgeon within a week of your operation date, after all the requested work up has been completed.

Day of Surgery

Patients are admitted the morning of surgery. After the surgery, patients will be taken to the recovery room until they are ready to go to their room. Most patients do not go to the ICU, but is always a possibility. The first 24 hours you will have a naso-gastric tube in your nose and a foley catheter in your bladder. These are usually removed the next day. Intravenous fluids may be given to you in your arm or through a central line. You will be able to administer your own pain medication via a patient control analgesia (PCA) pump. You will have a vertical incision or several small incisions with dressings over the areas. There will be two temporary drains on either side of the incision. You will go home with these drains and have them taken out at your first follow up visit.

Both legs and feet will be wrapped with Ace bandages or TED hose and a foot pump will be applied to reduce the chance of blood clot formation in your legs. Once patients become sufficiently ambulatory, the foot pumps and ace bandages are taken off.

Ambulation will start the evening of surgery. One to two days post-op you will start drinking clear liquids. By the time you are discharged, you should be tolerating soft food and be able to walk comfortably. You will need some assistance with personal care during your hospital stay and after being discharged.

Out-of-Town Patients

Central Valley Bariatrics has a very detailed and personal program tailored to our out of town patients. Our goal for the out of town patient is to receive continuity of care during the critical post-operative period. We feel that continuity of care is vital to the progress of the patient, decreases complications, and promotes excellent long-term success. We attempt to consolidate consultative visits, pre-operative education, and follow-up appointments to allow for the best outcome for the patient. Each patient is viewed individually based on pre-operative history, overall health, surgery course, post-operative care, and family/home situation.

Generally, depending on the previously mentioned items, the out of town patient will need to stay within a close proximity of our office during the immediate post-operative period. This immediate post-operative period is generally 7-10 days, however, each case is reviewed and we will ultimately decide the time frame for each individual. Area motels offer reduced rates to our patients and in some cases extended care facilities may be utilized if a patients condition warrants.

The Gastric Reduction Duodenal Switch (GRDS) procedure is an extensive surgery and therefore patients will need a support person during the post-operative period to assist them with activities of daily living and hygiene. Out of town patients will need a support person that is capable, both emotionally and physically, of assisting them after surgery. Depending on patient preference, the support person may or may not stay with the patient while hospitalized, but this is a requirement after discharge.

Out of Town Patients

(continued)

Upon release from the post-operative period, we will work closely with the patient's primary care physician within the patient's residential location, to maintain continuity of care. Due to the nature of weight loss surgery it is essential to the patients well being that a working relationship between doctors is established and maintained long term.

Follow-Up Care

You will probably go home 3-5 days after surgery. You will need to be seen in the office 7-10 days after surgery. Staples and possibly the drains will be removed at that time. Office visits will then be at 3 weeks, 6 weeks, 3 months, 6 months, 9 months, 1 year, 18 months, and then annually thereafter. Lab work is also required at 6 months and yearly thereafter. During this time, it is strongly recommended that you attend monthly group meetings. Your diet will be more clearly spelled out for you in your workbook. You will be on a soft diet the first month, then gradually adding one new food item at a time until you are basically on a regular diet.

Adequate fluids and protein are essential the first month. Foods containing lactose, high fat content and excessive amounts of sugar are to be avoided. Patients' commitment to compliance, exercise and improved nutrition, all work together with this surgery for significant weight loss and maintenance. Patients must take a general multi-vitamin and calcium supplement for the rest of their life.

Complication

The overall chance of a complication (major or minor) is approximately 10%. There is also 1% chance of mortality associated with this operation. Correction of some of the complications may necessitate re-operation, either during the same hospitalization stay or at a later date. Some of the complications are related to the weight loss surgery for example bowel leakage. Others, are related to the risk of any general anesthetic surgery, pneumonia, DVT (deep vein thrombosis or blood clots) and PE (pulmonary embolism).

It is very important to realize that the duodenal switch operation, like any other weight loss surgical procedures, is a complex operation. Patients need to understand all material risks associated with each and every different weight loss surgical procedure. Patients should investigate all the different types of weight loss operations, understand the common side effects and complications unique to each one, before electing to undergo one particular operation.

There is a vast body of information to patients.

Each patient should, during their consults with their surgeon, ask questions and expect satisfactory answers.

Patients are also asked to attend group meetings, during which they will be able to interact with patients who have had the procedure and may have had complications after their weight loss surgery.

Conclusion

Morbid obesity is a chronic disease. There are different operations that are being offered for the treatment of morbid obesity. The operation performed by us is different from those offered by most other centers. GRDS preserves the function of the pyloric valve. This eliminates the complication of “Dumping syndrome” which occurs with the Gastric Bypass operation.

GRDS is a major operation. Possible complications of the surgery are similar to those of any other major abdominal surgeries. There is also some increase risk because of the associated illnesses of morbid obesity. These potential complications include, bleeding, infection, formation of blood clots in the legs (thrombophlebitis) and their travel to the lung (pulmonary embolism), pneumonia, bowel obstruction, leakage and breakdown of the suture lines, injury to the spleen (necessitating removal of the spleen), incisional hernia, heart attack, stroke and even death.

There may also be some long term complications, including protein malabsorption, vitamin deficiency, anemia, and narrowing at the suture lines.

As this operation was first performed in 1988, there has been a great deal of scientific data available as to how to prevent and avoid the majority of the above mentioned complications. There is also a great deal of information available regarding how to correct the complications should they occur.

How to Contact Us

Our office may be reached Monday through Friday between the hours of 9:00 AM and 5:00 PM. You will need to provide us with some preliminary information such as your age, weight, height, and insurance information. We will then schedule the first office visit, for a detailed history taking and physical exam. You can also visit our web site at www.gr-ds.com for additional information and helpful links. You may email us at office@gr-ds.com. Our fax number is 661-725-8051. The appointments for Las Vegas are made through our Delano office. Our Phone numbers are 800-816-6647, or 661-725-4847.

Driving Directions

From either north or south on highway 99 take the Woollomes Rd. exit and go east (across the rail road tracts) to stop sign at Woollomes Rd. and Lexington St. Turn north (left) on Lexington to Garces Highway. Our office and the hospital are on the north east corner of the Garces and Lexington.

Internet Resources

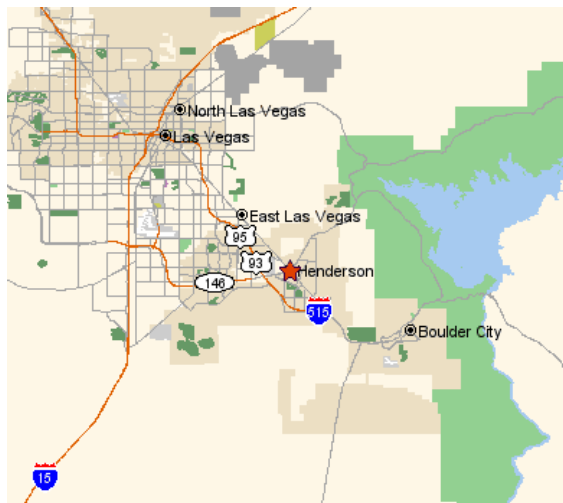
www.yahogroups.com/DS-Keshishian-friends.com
www.duodenalswitch.com
www.gr-ds.com

DIRECTIONS

Our CALIFORNIA office is located adjacent to the Delano Regional Medical Center. City of Delano is 30 miles north of Bakersfield, and 75 miles south of Fresno on highway 99.



Our NEVADA office, near Las Vegas, is located at:
1701 N. Green Valley Pkwy #10a
Henderson, NV 89074



Glossary

Absorption– Process by which nutrition and energy is absorbed from digested food.

Anastomosis– connection between two structures, by suturing, stapling or both.

BMI– a number that is calculated based on a persons height and weight. It correlates with a persons chances of developing co-morbidities and premature death. (see text for formula).

Co-Morbidities– Illnesses that are associated with the disease of obesity.

Dumping Syndrome -Complication of the Gastric by-pass operation. Feeling of nausea, diarrhea, lightheadedness and fainting after ingestion of sweets, high calorie liquids or dairy products.

Duodenum-The first portion of the small bowel. The other two segments are **ileum** and **Jejunum**.

Duodenal Switch (DS)- A type of weight loss surgery where stomach is made smaller for smaller meal portion, and part of small intestine (Jejunum) is bypassed to limit absorption.

Diabetes– failure of the regulatory system of the body to control blood sugar. This sometime is treated with diet and exercise, or medication and in severe cases by insulin.

Endoscopy– Passing a long flexible camera through the mouth to the stomach for diagnosis, treatment or retrieval of retained food at a stricture. Common problem with Gastric bypass.

Fobi Pouch– A type of Gastric Bypass where a synthetic ring is placed to limit flow of food from the small stomach pouch to the small intestine.

Hypertension– Elevated blood pressure.

Glossary

Gastric Bypass- A type of weight loss surgery where stomach is made smaller for smaller meal portion. This reduction is very significant and only allows patient to eat a very small and unhealthy portions.

Laparoscopy- A method of performing operations utilizing long instruments and video camera, without making a long incision.

Marginal ulcer- Ulcer that is formed at the border of two bowel anastomosis. Common with gastric bypass operation.

Pulmonary Embolism- Blockage of the major vessels to the lung by a large blood clot. This origin of the blood clot is usually the lower extremities.

Stricture- Narrowing at an anastomosis. May require re-operation or dilation by the means of endoscopy. Common problem with the Gastric bypass. Rarely seen with DS.

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