

BARIATRIC SURGERY PROGRAM

*Hawai'i's first program with a director
who has walked the path you're on*



PALI MOMI
MEDICAL CENTER
An Affiliate of Hawai'i Pacific Health



www.palimomi.org/bariatrics

YOUR BARIATRIC SURGERY HANDBOOK

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YOUR ROLE

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

- Commit to improving your health.
- Discuss your health history with your surgeon.
- Discuss any questions or concerns you have and learn all you can about the surgery before making a decision.
- Follow all instructions on preparing for your surgery.
- Commit to following all instructions described in the bariatric surgery guide on nutrition, activity and other care after surgery (given to you by your surgeon before surgery).

Both the bariatric team and you must commit to honesty, responsibility and cooperation in order to increase your success.

MORBID OBESITY AND ITS MEDICAL IMPACT

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

Morbid obesity is a chronic condition that is very difficult to treat. Roughly, individuals are considered morbidly obese if their weight is more than 100 pounds in excess of the ideal body weight. A more exact (and more widely accepted) way to define morbid obesity is to use the body mass index (BMI).



“I talk to them about what they will be going through so they don't feel alone. They call me at any time just to talk.”

—Christi Keliipio, R.N., M.S.N., FACHE
Bariatric Surgery Program Director;
former bariatric surgery patient

The BMI is calculated as follows:

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

Morbidly obese people 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

**BMI AS A FUNCTION OF HEIGHT AND WEIGHT
IN FEET, INCHES AND POUNDS**

	NORMAL					OVERWEIGHT					OBESE										
BMI	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
HEIGHT INCHES	BODY WEIGHT (POUNDS)																				
58	91	96	100	105	110	115	119	124	129	134	138	143	148	153	158	162	167	172	177	181	186
59	94	99	104	109	114	119	124	128	133	138	143	148	153	158	163	168	173	178	183	188	193
60	97	102	107	112	118	123	128	133	138	143	148	153	158	163	168	174	179	184	189	194	199
61	100	106	111	116	122	127	132	137	143	148	153	158	164	169	174	180	185	190	195	201	206
62	104	109	115	120	126	131	136	142	147	153	158	164	169	175	180	186	191	196	202	207	213
63	107	113	118	124	130	135	141	146	152	158	163	169	175	180	186	191	197	203	208	214	220
64	110	116	122	128	134	140	145	151	157	163	169	174	180	186	192	197	204	209	215	221	227
65	114	120	126	132	138	144	150	156	162	168	174	180	186	192	198	204	210	216	222	228	234
66	118	124	130	136	142	148	155	161	167	173	179	186	192	198	204	210	216	223	229	235	241
67	121	127	134	140	146	153	159	166	172	178	185	191	198	204	211	217	223	230	236	242	249
68	125	131	138	144	151	158	164	171	177	184	190	197	203	210	216	223	230	236	243	249	256
69	128	135	142	149	155	162	169	176	182	189	196	203	209	216	223	230	236	243	250	257	263
70	132	139	146	153	160	167	174	181	188	195	202	209	216	222	229	236	243	250	257	264	271
71	136	143	150	157	165	172	179	186	193	200	208	215	222	229	236	243	250	257	265	272	279
72	140	147	154	162	169	177	184	191	199	206	213	221	228	235	242	250	258	265	272	279	287
73	144	151	159	166	174	182	189	197	204	212	219	227	235	242	250	257	265	272	280	288	295
74	148	155	163	171	179	186	194	202	210	218	225	233	241	249	256	264	272	280	287	295	303
75	152	160	168	176	184	192	200	208	216	224	232	240	248	256	264	272	279	287	295	303	311
76	156	164	172	180	189	197	205	213	221	230	238	246	254	263	271	279	287	295	304	312	320

**BMI AS A FUNCTION OF HEIGHT AND WEIGHT
IN FEET, INCHES AND POUNDS**

	EXTREME OBESITY																				
BMI	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
HEIGHT INCHES	BODY WEIGHT (POUNDS)																				
58	191	196	201	205	210	215	220	224	229	234	239	244	248	253	258	261	266	271	276	281	286
59	198	203	208	212	217	222	227	232	237	242	247	252	257	262	267	271	276	281	286	291	296
60	204	209	215	220	225	230	235	240	245	250	255	261	266	271	276	281	286	291	296	301	306
61	211	217	222	227	232	238	243	248	254	259	264	269	275	280	285	291	296	301	306	311	316
62	218	224	229	235	240	246	251	256	262	267	273	278	284	289	295	301	306	311	316	321	326
63	225	231	237	242	248	254	259	265	270	278	282	287	293	299	304	311	316	321	326	331	336
64	232	238	244	250	256	262	267	273	279	285	291	296	302	308	314	321	326	331	336	341	346
65	240	246	252	258	264	270	276	282	288	294	300	306	312	318	324	331	336	341	346	351	356
66	247	253	260	266	272	278	284	291	297	303	309	315	322	328	334	341	346	351	356	361	366
67	255	261	268	274	280	287	293	299	306	312	319	325	331	338	344	351	356	361	366	371	376
68	262	269	276	282	289	295	302	308	315	322	328	335	341	348	354	361	367	371	376	381	386
69	270	277	284	291	297	304	311	318	324	331	338	345	351	358	365	371	378	381	386	391	396
70	278	285	292	299	306	313	320	327	334	341	348	355	362	369	376	381	389	391	396	401	406
71	286	293	301	308	315	322	329	338	343	351	358	365	372	379	386	391	401	406	411	416	421
72	294	302	309	316	324	331	338	346	353	361	368	375	383	390	397	401	411	416	421	426	431
73	302	310	318	325	333	340	348	355	363	371	378	386	393	401	408	411	421	426	431	436	441
74	311	319	326	334	342	350	358	365	373	381	389	396	404	412	420	421	431	436	441	446	451
75	319	327	335	343	351	359	367	375	383	391	399	407	415	423	431	431	441	446	451	456	461
76	328	336	344	353	361	369	377	385	394	402	410	418	426	435	443	441	451	456	461	466	471

Source: Adapted from Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report.



"It will change your life. It is one of the hardest, and the best thing you will ever do."

—Clesson Werner
Pali Momi bariatric surgery patient

dramatically as weight increases. For example, very obese men between the ages of 25 and 35 are 12 times more likely to die prematurely compared to normal weight men of the same age.

Medical conditions that are commonly caused or made worse by obesity:

- **Respiratory conditions** – obstructive sleep apnea, obesity hypoventilation syndrome, asthma/reactive airway disease
- **Heart conditions** – high blood pressure, heart failure caused by pulmonary hypertension, higher risk of coronary artery disease (atherosclerosis)

- **Abdominal conditions** – gallbladder disease, GERD (recurrent heartburn), recurrent ventral hernias, fatty liver
- **Endocrine conditions** – diabetes, hirsutism, hyperlipidemia, hypercholesterolemia
- **Urinary and reproductive conditions** – frequent urinary tract infections (UTI's), stress urinary incontinence, menstrual irregularity or infertility
- **Musculoskeletal conditions** – degeneration of knees and hips, disc herniation, chronic non-surgical low back pain
- **Skin conditions** – multiple disorders, most related to diabetes and yeast infections between skin folds
- **Cancer risk** – breast, uterine, prostate, renal, colon, pancreatic, gastric, gallbladder and endometrium

A BMI 40 and above 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 morbid obesity, bariatric surgery is the standard of care. When other medically supervised treatments have failed, bariatric surgery offers the best option of long-term weight control. One of the most popular and successful surgical approaches is the Roux-en-Y gastric bypass.

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

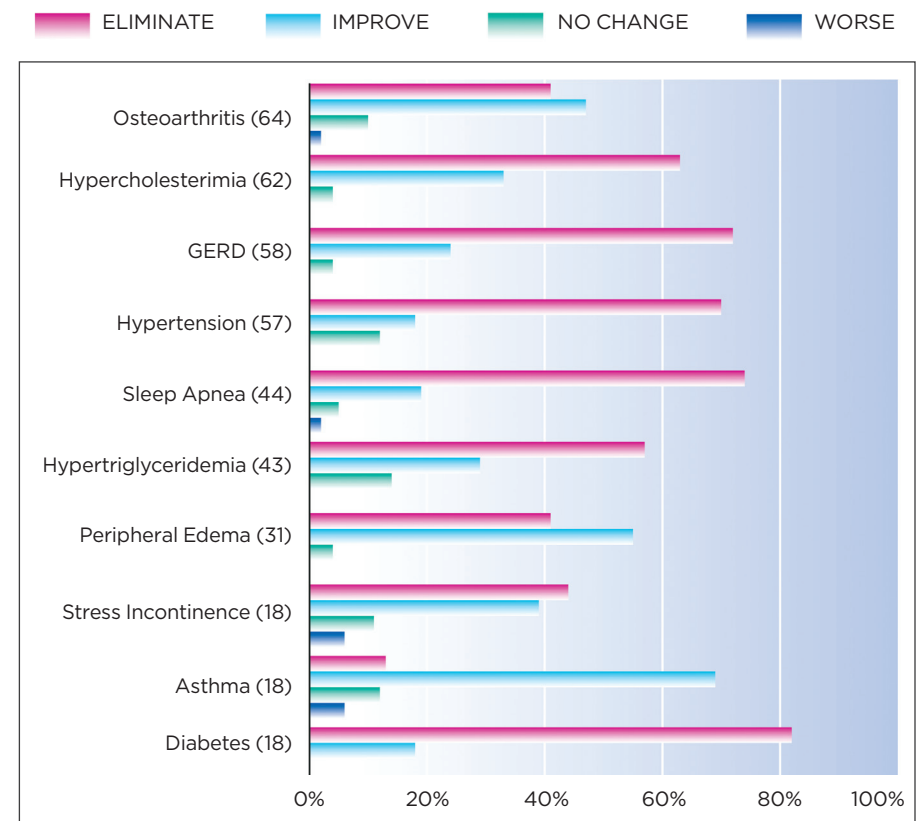
the only effective means of inducing significant long-term weight loss for the vast majority of patients with morbid obesity.

WHY CONSIDER MAJOR SURGERY?

Nearly 80% of obese patients have one or more of the following conditions:

- Diabetes
- Dyslipidemia
- Gallbladder disease
- Coronary Artery Disease/ Hypertension
- Osteoarthritis

Bariatric surgery has proven effective in treating these conditions. In one study of 104 patients at 1 year post-operation, 90.8% of patient conditions were improved or completely eliminated. See graph below.



Schauer, et al, AnnSurg 2000 Oct;232(4):515-29

Kenneth Jones, Surgery 5/13/11,
lost over 100 pounds



before

after

SETTING REALISTIC EXPECTATIONS

The goal of surgery is to help lose over half of your excess weight. This can reduce or prevent health problems.

Keep in mind that:

- It's not cosmetic surgery.
- 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 and 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

- 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.

- In the gastric bypass procedure, a surgeon makes a direct connection from the stomach to a lower segment of the small intestine, thus bypassing the duodenum and some of the jejunum. This procedure causes food to be poorly digested and absorbed (malnutrition).

Note: Vitamin and mineral supplements and a high protein intake will be a lifetime commitment 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 OF GASTRIC BYPASS SURGERY

BENEFITS

- 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.

RISKS

- 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.
- 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.
- More than 1/3 of gastric bypass patients develop gallstones, which could lead to a laparoscopic procedure known as cholecystectomy to remove the gallbladder.
- 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, resulting typically from a high intake of simple sugars and carbs.

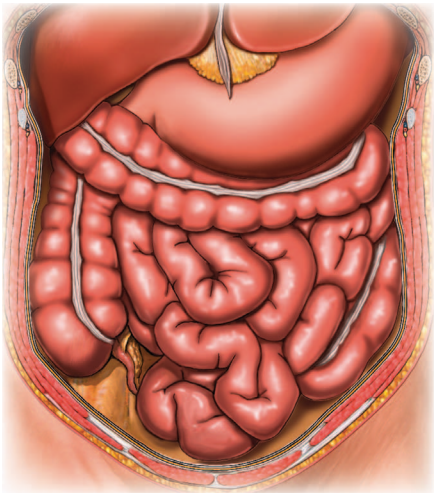
Brett Bulseco, surgery 2/9/10,
lost 200 pounds



before

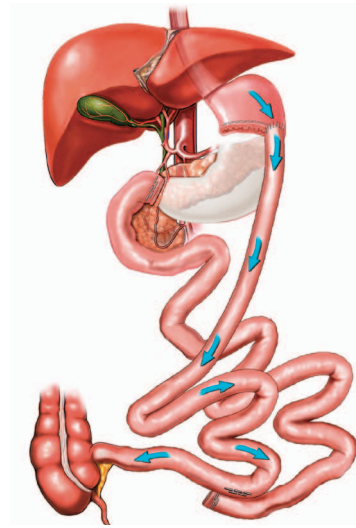
after

Note: It is important to know that this 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.



THE NORMAL DIGESTIVE PROCESS

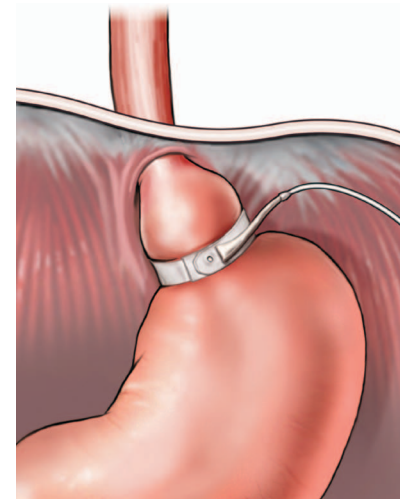
Normally, as food moves along the digestive tract, appropriate digestive juices and enzymes arrive at the right place at the right time to digest and absorb calories and nutrients. After chewing and swallowing the food, it moves down the esophagus to the stomach, where a strong acid continues the digestive 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 remaining two segments (the jejunum and ileum) 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)

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. The procedure essentially eliminates stomal ulcers and dumping syndrome.



RESTRICTIVE PROCEDURES

Restrictive gastric procedures restrict the size of the stomach. There are several types of restrictive procedures. **Vertical Banded** and **Silastic Ring Gastroplasties** use a staple line to restrict the size of the stomach. The LAP-BAND® system utilizes an adjustable band that restricts the opening to the remainder of the stomach. The LAP-BAND® is a promising new technology that is new to the USA (approved by the FDA in June 2001). This procedure recalls the principle of doing the smallest (least invasive) procedure possible to achieve the desired result. In this method, a band is placed at the top of the stomach, creating a pouch. The opening to the rest of the digestive tract is adjustable through an epidermal port. The concept here is to create anatomy that provides a sensation of satiety after a very small meal. Weight loss for restrictive procedures is much less than that of the malabsorptive procedures and the Roux-en-Y gastric bypass. It can also be accompanied by a considerable amount of vomiting.



The Vertical Sleeve Gastrectomy is regarded as a restrictive procedure where approximately 80% of the stomach is removed. The new, smaller stomach is the shape of a banana. The Sleeve Gastrectomy limits the amount of food intake, making you feel full after eating small amounts of food. After the surgeon removes most of your stomach, the remaining portions of the stomach are surgically stapled together creating a "sleeve" shaped stomach. This procedure does not bypass the intestines; therefore, there is no gastrointestinal malabsorption. The Ghrelin hormone is removed which significantly reduces the feeling of hunger. This procedure is not recommended for those with GERD as it may cause symptoms to worsen.

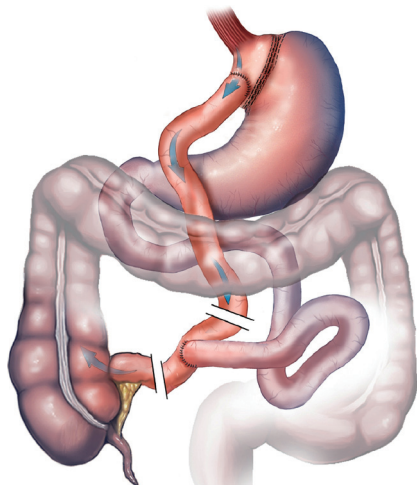


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COMBINATION PROCEDURES

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):

- **Exploration of the abdomen** – after the abdomen is entered (with an open incision or laparoscopically using a viewing telescope and small 5 to 15 mm 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.
- **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.

- **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 purpose is to create a tiny stomach pouch that is 15 to 20 ml in size. In other words, this creates a cuff of stomach on the bottom end of the esophagus.
- **Formation of the gastro-jejunal anastomosis (attachment of stomach “gastro” to the small intestinal roux limb “jejunal”)** – this maneuver is the key part of the entire operation. 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.
- **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.

- **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 staples, depending on the surgeon’s preference.

*Pamela Duprau, surgery 6/28/11,
lost 90 pounds*



before

after

BARIATRIC SURGERY – AN OVERVIEW OF PROCEDURES

	PROCEDURE	PROS	CONS
MALABSORPTIVE	<ul style="list-style-type: none"> Jejuno-ileal bypass Biliopancreatic Diversion and Duodenal Switch 	Greater sustained weight loss with less dietary compliance	<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"> Vertical Banded Gastroplasty (VBG) Silastic Ring Gastroplasty Adjustable Band Gastroplasty (LAP-BAND®) Vertical Sleeve Gastrectomy 	<ul style="list-style-type: none"> Relatively easy operation No protein-calorie malabsorption No vitamin or mineral deficiencies due to malabsorption 	<ul style="list-style-type: none"> Less weight loss maintenance More late failures due to dilation Less effective with sweet eaters Significant dietary compliance required Risk of decreased esophageal function Risk of band erosion, band slippage and silastic reaction
COMBINATION	<ul style="list-style-type: none"> 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 absorption Gradual weight gain over 15 years

EXPECTED WEIGHT LOSS AFTER GASTRIC BYPASS

The gastric bypass procedure can successfully start patients on the road to recovery from morbid 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 almost half of their excess weight in the first year and continue to lose weight after this point.

There is no amount of weight loss that is guaranteed. Weight control is the personal responsibility of the gastric bypass patient.

Successful habits include:

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

Tom & Edwina Oliveira, surgery performed in 2010, together lost over 200 pounds



after

before



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 patients 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.

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, in the minds of patients undergoing surgery for morbid obesity the questions are:

- “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 who have a general feeling that maintaining their weight is indeed their own responsibility and that surgery was a tool they used to reach and maintain a healthy weight, succeed and do better in the long term.

Lack of exercise, poorly balanced meals, constant grazing and snacking and drinking carbonated beverages are the basic causes of not maintaining weight loss. Additionally, regular attendance of support groups and workshops greatly increases patients' compliance with the recommendations for optimal weight loss and maintenance.

DIET

After gastric bypass, the patients must carefully follow the recommendations outlined in the bariatric surgery guide 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. In order to achieve optimal post-operative nutrition, it is essential that you take **daily multivitamins and mineral supplementations for the rest of your life**. Post-operative diets are separated into 5 steps. Here is an overview of the expected post-operative diet:

- **Step 1:** A clear liquid diet, started two or three days after surgery. It essentially provides hydration during the initial post-operative period. Examples of clear liquids are chicken, beef or turkey broth, water, jello and clear sport drinks.
- **Step 2:** Once you are able to tolerate clear liquids, you will begin a full liquid diet for one week. A full liquid diet usually contains more texture than a clear liquid diet. Keep in mind that these foods should all be sugar free and fat free. Some food choices include milk, yogurt, strained soups, sugar free popsicles and fudgesicles.
- **Step 3:** In step three, you will advance to a pureed diet. Step 3 usually lasts about two weeks. In this step, you will consume foods that have the con-

sistency of applesauce or a pudding texture. It is very important to ensure that the food you consume during this time is pureed well to prevent certain types of blockage.

- **Step 4:** In step four, the texture and the thickness of your foods should resemble a mashed or ground texture. During this step, you will add new foods to see if you are able to tolerate them. If you experience the inability to tolerate new foods, do not give it up entirely. Try it again in a few days. Each person's tolerance to different types of food varies from person to person. The only way to discover your tolerance is by trial and error. Just remember to chew your food completely and take small bites.
- **Step 5:** Congratulations, you have progressed onto solid foods! At the beginning of this step, you should still gradually increase your intake of textured foods. For example, instead of mashing down your steamed vegetables, chew your vegetables really well. In this step, you should focus more on your protein intake. The amount of protein you consume should be half the amount of a small side salad plate. The rest of the plate should consist of salads or vegetables and a small amount of carbohydrates. Remember to focus on making healthy food choices to get the maximum amount of nutrition from such a small amount of food. Also, incorporate exercise into your daily life to help with the weight loss and maintenance.

NUTRITIONAL EXPECTATIONS

After gastric bypass 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, 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 1-1/2 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



"You'll go through stages of adjustment—physically and psychologically. When I realized I could never go back to the way I used to eat, I just started bawling. It was my grieving process."

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, low sugar and have a good taste.

Avoid foods which contain sugar. Not only will they slow down your weight loss, but they can make you sick! 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 and can take place 30 to 60 minutes after eating.

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

- Drink fluids before the meal. Do not drink liquids with meals. Then wait 20 minutes after meals before resuming fluids to prevent pouch stretching and vomiting.
- 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.

- Stop eating when feeling full or if feeling any discomfort.
- 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.
- Concentrate on eating protein rich foods such as fish and seafood, cheese, eggs and poultry. At meal-time, eat protein foods first before any other food.
- Do not snack between meals.
- Avoid very sweet food, candy, chocolate and high-sugar beverages to prevent the unpleasant effects of dumping syndrome.
- Sip liquids slowly, drinking at least 1/2 cup every hour between meals to total 8 eight-ounce cups per day to avoid dehydration.
- Minimize alcohol intake as it is high in calories, may cause an ulcer, and the effects may be felt much more quickly.
- 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

OUR BARIATRIC SURGERY PROGRAM TEAM



Mark Grief, M.D., FACS

Bariatric Surgeon, Bariatric Program Medical Director

He was trained by renowned bariatric surgeon Dr. Ninh T. Nguyen, UC Irvine, pioneer in laparoscopic Roux-en-Y Gastric Bypass. He is a board certified surgeon and has been in practice for more than 20 years.



Christi Keliipio, R.N., M.S.N., FACHE

Bariatric Surgery Program Director

She is a former bariatric surgery patient, having lost more than 100 pounds. She has the firsthand experience to understand and guide patients to success. She received her master of science in nursing from the University of Hawai’i.



Maria Akagi, R.N., B.S.N.

Registered Nurse

She has worked in the nursing field for over 12 years and received her bachelor of science in nursing from the University of Phoenix.



Sasha Goto, MBA, MAOC

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She has worked in health care for more than 5 years and received her master in business from Hawai’i Pacific University.



Lianne Metcalf, MS, RD, LD

Clinical Dietician

She received her master of science in clinical nutrition from New York University.

For questions about our Bariatric Surgery Program, please contact us at (808) 485-4173.



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