Choosing Bariatric Surgery to Improve Overall Health:

2012 Healthgrades Trend Report

A recent study forecasts that in 20 years four in 10 Americans will be obese and the number of severely obese adults will more than double.[1] To address this obesity epidemic, the U.S. Preventive Services Task Force recommends an intensive, multidisciplinary treatment program for obesity.[2] Bariatric surgery (weight-loss surgery) is the only option that effectively treats severe obesity in people for whom more conservative measures such as diet, exercise, and medication have failed. Weight-loss surgery reduces the amount of calories your body can consume by using restrictive devices to reduce the size of the stomach and changing the way the body absorbs nutrients.

Choosing a hospital provider with proven outcomes is critical to a safe bariatric surgery experience and the best outcomes. To help consumers select a provider, Healthgrades objectively evaluated in-hospital complications in states where data are publicly available.

In this report, Healthgrades analyzed 201,821 bariatric surgery hospital discharges from 2008 through 2010 and risk-adjusted in-hospital complications of 478 hospitals in 19 states. Risk adjustment allows for a valid comparison of hospitals, taking into account the types of patients treated. Hospitals are rated as 5-star (best), 3-star (as expected), and 1-star (poor). Individual hospital ratings and ratings methodology can be found at **www.Healthgrades.com**.

To be included in the analysis, hospitals had to have a minimum of 30 cases over the three years studied and at least five cases in 2010. Of the 478 hospitals that met the volume criteria:

- 108 hospitals (22.59%) stand out as "best" performers (5-star rated)
- 265 hospitals (55.44%) were rated "as expected" performers (3-star rated)
- 105 hospitals (21.97%) were rated as "poor" performers (1-star rated)

How Bariatric Surgery Improves Overall Health

Bariatric surgery's many health benefits are driving its popularity. It can cause significant long-term weight loss, often 50-70% of excess body weight. In addition, it has been shown to reverse common complications of obesity, including type 2 diabetes, sleep apnea, and cardiovascular silent killers like high cholesterol and high blood pressure. Striking improvements in diabetes may be seen just days after surgery, before significant weight loss occurs. Additionally, significantly more patients achieve long-term resolution of their diabetes with bariatric surgery than with conservative weight-loss measures.[3]

These benefits improve patients' quality of life and overall health, and reduce their risk of heart disease, stroke, and early death. They may also reduce future healthcare costs, making bariatric surgery a cost-effective solution for health insurers.[4] Together, these advantages drove a 16-fold increase in the number of bariatric surgeries performed in the United States, growing from 13,386 surgeries in 1998[5] to 220,000 procedures in 2009.[6]

Fostering the Best Patient Outcomes

While bariatric surgery's potential benefits are numerous, as with all surgeries there are risks to consider. The short-term surgical and post-operative risks include respiratory complications, hemorrhage (bleeding), infection, and death. Long-term risks include nutritional deficiencies and device complications requiring additional surgery. In addition, obese patients who are appropriate candidates for bariatric surgery frequently have other conditions, such as heart disease, high blood pressure, diabetes, and lung problems, which increase their surgical risks.

To drive beneficial outcomes, it is important for providers to focus on well-developed nonsurgical weight-loss options that ensure only appropriate patients are selected for surgery. Successful surgical results also depend on a patient's willingness to adopt ongoing lifestyle changes, including a long-term plan of healthy eating and regular physical activity.

To assure the best outcomes for patients, it is critical that bariatric surgery programs:

- Ensure appropriate patient selection
- Identify and reduce (where possible) individual patient risks
- Have surgeons with adequate experience (minimum of 50 to 100 cases per year per surgeon)

SUMMARY OF FINDINGS

From 2008 through 2010, across the 19 states studied:

201,821
in-hospital bariatric procedures performed

5.87%
of patients experienced one or more in-hospital complications

In-hospital mortality was rare with:

1 death per 1,740 cases
(0.057% mortality rate)

On average, bariatric surgery patients were charged:

$41,594
for a laparoscopic procedure

$45,137
for an open procedure

CHOOSING THE RIGHT PROVIDER IS CRITICAL

Five-star rated hospitals, as a group, had higher quality, shorter hospital stays, and charged less than all other hospitals. Patients having bariatric surgery at 5-star hospitals are:

72.26%
less likely to experience in-hospital complications than patients at 1-star programs

If all hospitals from 2008 through 2010 had performed at the level of 5-star hospitals:

5,788
patients could have potentially avoided a major in-hospital complication

SHORTER STAY AT 5-STAR HOSPITALS

Patients having a bariatric procedure at a 5-star facility spent an average:

1/2 day
less in the hospital
than patients having their procedure at a 1-star facility (1.88 days versus 2.37 days, respectively).

LOWER SURGERY CHARGES AT 5-STAR HOSPITALS

Patients having a bariatric procedure at a 5-star facility are charged an average:

$3,189 **less** than patients having their procedure at a 1-star facility.

Find ratings for hospitals in your area.
www.healthgrades.com/find-a-hospital

Trends and Outcomes in Bariatric Surgery Procedures

In this study, we evaluated trends in the number of procedures, surgery charges by state, procedure types, and mortality and complication rates. We also compared overall performance between 5-star, 3-star, and 1-star-rated hospitals. An actual-to-expected ratio is used to compare the number of complications seen in a hospital to the number of complications expected at a hospital based on the types of patients treated at that hospital (considering age, gender, and other risk factors, such as chronic illnesses). Death is considered a complication.

The actual-to-expected ratio indicates if the hospital has more complications than expected. A ratio of one shows the hospital is performing as expected. A ratio greater than one shows the hospital has more complications than expected. A ratio less than one shows the hospital has fewer complications than expected.

State Inpatient Procedure Volume Trends Varied Widely

In the 19 states studied, there was a total of 201,821 bariatric inpatient surgery procedures performed from 2008 through 2010. During this time, the number of inpatient procedures decreased by 6.39%, with 69,724 procedures performed in 2008 and 63,868 procedures in 2010 (Table 1).

- **Massachusetts** and **North Carolina** showed large **increases** in the number of inpatient bariatric procedures with an increase of 29.70% and 24.65% respectively.
- **Arizona**, **Rhode Island**, and **Virginia** experienced **declines** in the number of inpatient bariatric procedures (31.61%, 30.87%, and 30.23% respectively).

Table 1. Bariatric Surgery Hospital Volume Trends by State and Year

State	2008	2009	2010	2008-2010	Percent of Total Cases 2008-2010	Percent Change 2008-2010
California	13,116	13,394	12,344	38,854	19.25%	-5.89%
New York	8,962	9,191	7,791	25,944	12.85%	-13.07%
Texas	8,049	8,285	7,602	23,936	11.86%	-5.55%
Pennsylvania	7,131	7,422	6,983	21,536	10.67%	-2.08%
Florida	4,991	4,786	4,744	14,521	7.19%	-4.95%
Massachusetts	3,771	4,727	4,891	13,389	6.63%	29.70%
New Jersey	3,684	3,543	2,939	10,166	5.04%	-20.22%
North Carolina	2,974	3,346	3,707	10,027	4.97%	24.65%
Virginia	3,166	2,957	2,209	8,332	4.13%	-30.23%
Arizona	2,249	2,057	1,538	5,844	2.90%	-31.61%
Maryland	1,687	1,717	1,434	4,838	2.40%	-15.00%
Wisconsin	1,283	1,384	1,432	4,099	2.03%	11.61%
Washington	1,297	1,347	1,380	4,024	1.99%	6.40%
Nevada	1,391	1,142	1,077	3,610	1.79%	-22.57%
Colorado	1,196	1,162	1,147	3,505	1.74%	-4.10%
Oregon	1,087	1,156	1,033	3,276	1.62%	-4.97%
Iowa	929	902	735	2,566	1.27%	-20.88%
Utah	712	691	499	1,902	0.94%	-29.92%
Rhode Island	554	515	383	1,452	0.72%	-30.87%
All	**68,229**	**69,724**	**63,868**	**201,821**	**100%**	**-6.39%**

Bariatric Surgery Trumps Liposuction for Health

Bariatric surgery improves obesity-related health issues like diabetes and high cholesterol. Liposuction (using suction to remove excess fat under the skin) does not.[7,8] In some cases, surgeons perform liposuction during gastric bypass surgery. However, removing excess fat during gastric bypass surgery will not provide additional diabetes benefits.[9] Studies show that altered digestion, not fat loss, appears to affect blood sugar control and other metabolic factors the most.[10]

19 STATES STUDIED

Healthgrades analyzed overall trends associated with bariatric surgery in the following **19 states** where data are publicly available:

- Arizona
- California
- Colorado
- Florida
- Iowa
- Maryland
- Massachusetts
- Nevada
- New Jersey
- New York
- North Carolina
- Oregon
- Pennsylvania
- Rhode Island
- Texas
- Utah
- Virginia
- Washington
- Wisconsin

TOP STATES FOR BARIATRIC SURGERY PROCEDURES

The **most inpatient procedures** were performed in California, New York, and Texas (19.25%, 12.85%, and 11.86% of the inpatient procedures, respectively). The **fewest inpatient procedures** were performed in Iowa, Utah, and Rhode Island. Collectively, these three states performed less than 3% of the inpatient procedures (Table 1).

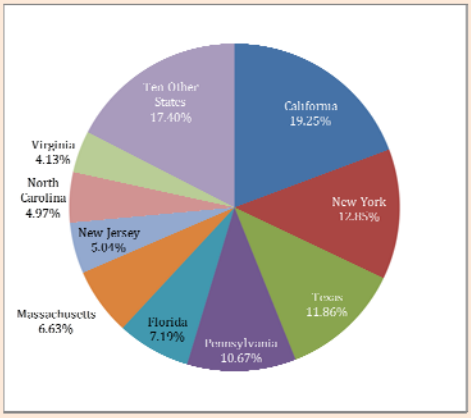

Table 2. Bariatric Volume Trends by Payer

Payer	Total Cases 2008-2010	Percent of Total Cases 2008-2010
Commercial Insurance		
Blue Cross	36,603	18.14%
Blue Cross HMO	12,079	5.99%
Commercial, Self-Insured	24,685	12.23%
HMO/PPO	75,759	37.54%
Government Programs		
TRICARE	4,011	1.99%
Medicaid	14,211	7.04%
Medicare	24,949	12.36%
VA/Government	1,802	0.89%
Other		
Self-Pay	7,495	3.71%
Unknown/Other	79	0.04%
Worker's Compensation	148	0.07%
All	**201,821**	**100.00%**

How Consumers Are Paying for Services or Treatments

A payer is any third-party entity that helps consumers pay for services or treatments. Patients with **commercial insurance** represent the majority of patients undergoing bariatric procedures (Table 2).

- Commercial insurance accounted for 73.90% of the patients undergoing a procedure, followed by government insurance at 22.28%, and self-pay at 3.71%.
- Growth in government insurance coverage outpaced that of commercial carriers, increasing by more than 12% over the prior study period.
- Medicaid showed the greatest increase in patient coverage from 2008 to 2010 with a 42.37% increase.

Surgery Charges Varied by State

- **California** is the **most expensive state** for bariatric surgery with an average charge of $57,280 per patient ($69,963 for open procedures and $56,744 for laparoscopic procedures), followed by **Texas** with an average charge of $51,047 ($45,263 for open procedures and $51,607 for laparoscopic procedures) (Table 3).
- **Maryland** is the **least expensive state** for bariatric surgery with an average charge of $15,896 ($18,406 for open procedures and $15,631 for laparoscopic procedures) (Table 3).

Procedure Types and Surgical Methods

Two types of procedures work in different ways to reduce the number of calories available to the body. **Restrictive procedures** (sometimes known as gastric stapling, stomach stapling, or stomach banding) can promote weight loss by reducing stomach size, which limits the amount of food that can be ingested.

Malabsorptive procedures (commonly known as gastric bypass) involve attaching the stomach directly to the middle of the small intestine, diverting food past most or all of the first section of the small intestine (the duodenum) where most calories are absorbed by the body.

Procedure types can be generally categorized by surgical method as **open**, meaning a large cut or incision in the abdomen, or **laparoscopic**, meaning many smaller cuts or incisions in the abdomen. Laparoscopic procedures are less invasive than open procedures.

Of the 201,821 procedures performed in-hospital from 2008 through 2010 (Table 4):

- 92.90% were restrictive or malabsorptive/restrictive procedures performed laparoscopically.
- 6.46% were malabsorptive (gastric bypass) procedures performed as open surgery.
- Less than one percent was biliopancreatic diversions with duodenal switch (BPD-DS), which are malabsorptive and restrictive procedures performed as open surgery.

Risk-Adjusted Complication Rates Are Not Impacted by Procedure Type

From 2008 to 2010, a patient's chance of experiencing a complication was not impacted by the procedure the patient underwent. All bariatric surgery procedures had similar actual and expected complication rates, with an actual-to-expected complication ratio of approximately 1.0 (Table 4). The actual-to-expected ratio accounts for the underlying health status of patients undergoing the procedure. That is, the ratio accounts for less healthy patients—those who are more likely to experience a complication than their healthier counterparts.

Table 4. Frequency of Bariatric Surgery Procedure Types and In-hospital Complications

Procedure Type	Surgical Method	Total Cases 2008-2010	Percent of Cases 2008-2010	Actual Rate of In-Hospital Complications	Expected Rate of In-Hospital Complications	Actual-to-Expected Ratio
Banding Procedures	Laparoscopic	54,822	27.16%	2.66%	2.66%	0.999
Other Laparoscopic	Laparoscopic	132,668	65.74%	6.50%	6.52%	0.998
Malabsorptive (Gastric Bypass)	Open	13,047	6.46%	12.24%	12.25%	0.999
Biliopancreatic Diversion With Duodenal Switch	Open	1,284	0.64%	11.84%	10.48%	1.129
Totals All Procedures		**201,821**	**100.0%**	**5.87%**	**5.87%**	**1.000**

SURGERY CHARGES VARIED BY STATE

Table 3. Average Charge by State

State	Average Charge Laparoscopic Procedures	Average Charge Open Procedures	Average
California	$56,744	$69,963	$57,280
Texas	$51,607	$45,263	$51,047
Pennsylvania	$46,936	$61,265	$47,990
Florida	$47,246	$55,984	$47,834
Colorado	$46,191	$58,202	$46,815
New Jersey	$41,699	$85,138	$44,895
Arizona	$38,852	$66,690	$40,062
Nevada	$38,858	$52,832	$39,067
North Carolina	$38,121	$53,324	$38,471
Washington	$38,138	$41,144	$38,366
Virginia	$34,266	$30,985	$33,751
Iowa	$32,952	$39,700	$33,647
Wisconsin	$31,424	$41,468	$32,255
Oregon	$29,696	$38,703	$30,224
Massachusetts	$27,339	$26,415	$27,273
Utah	$26,378	$42,885	$26,916
New York	$25,836	$23,471	$25,592
Rhode Island	$24,346	$46,204	$25,145
Maryland	$15,631	$18,406	$15,896
Average All Patients	**$41,594**	**$45,137**	**$41,848**

California

is the **most expensive state** for bariatric surgery with an average charge of $57,280.

Maryland

is the **least expensive state** for bariatric surgery with an average charge of $15,896.

Respiratory Complications Are Most Frequently Occurring Complication

The most frequently occurring complications among patients undergoing bariatric surgery were respiratory complications, including pulmonary insufficiency (lungs failing to function adequately after surgery) and lung collapse (Table 5).

Hemorrhage (excessive or uncontrolled bleeding), gastrointestinal complications, and operative lacerations (arteries, nerves, and/or other structures inadvertently cut or damaged during surgery) were also among the most frequent in-hospital complications. In-hospital mortality (death) was rare (0.06%) with one death for every 1,740 cases (Table 5).

Hospitals With Highest Volume Had Lowest Complication Rates

Volume, or the number of bariatric procedures performed by a particular hospital, was an important indicator of in-hospital complications. As volume increased, risk-adjusted complications showed a statistically significant decrease. As mentioned above, risk adjustment makes comparisons of clinical outcomes by hospital more valid and meaningful by accounting for sicker patients.

- **Hospitals with the highest volume** (defined as hospitals performing 375 cases or more during the three years of study) had the lowest rate of risk-adjusted in-hospital complications overall with an actual-to-expected ratio of 0.97 (3% fewer complications than expected) (Table 6).
- **Hospitals with the lowest volumes** (defined as hospitals performing less than 75 cases during the three years) had the highest rate of risk-adjusted in-hospital complications with an actual-to-expected ratio of 1.42 (42% more complications than expected) (Table 6).

Table 6. In-Hospital Complication Rates by Volume of Procedures Performed

Procedure Volume Range 2008–2010	Total Cases of All Hospitals in Volume Range	Actual Rate of In-Hospital Complications	Expected Rate of In-Hospital Complications	Actual-to-Expected Ratio
< 75	6,346	7.99%	5.64%	1.42
75-149	7,940	6.94%	5.93%	1.17
150-374	41,068	5.87%	5.78%	1.02
375 +	146,467	5.71%	5.89%	.97

Fewer Complications, Shorter Stays, and Lower Charges at 5-Star Rated Hospitals

- After adjusting for patient risk factors, patients having bariatric surgery at 5-star hospitals were, on average, 72.26% less likely to experience complications than patients having bariatric surgery at 1-star programs and 47.79% less likely to experience complications compared to 3-star programs (Table 7).
- This means that if all hospitals performed at the level of the 5-star programs across the 19 states, 5,788 bariatric patients could have avoided an in-hospital complication (Table 7).
- Patients having a procedure at a 5-star hospital spent, on average, almost half a day less compared to patients treated at 1-star hospitals (1.88 days versus 2.37 days respectively) (Table 7).
- Possibly as a result of higher in-hospital complication rates, 1-star hospitals charged on average $3,189 more per patient than 5-star programs. Similar percentages of laparoscopic procedures were seen in 1-star, 3-star, and 5-star hospitals (Table 7).

RESPIRATORY AND BLEEDING COMPLICATIONS OCCURRED MOST OFTEN

Table 5. In-Hospital Complications Associated With Bariatric Surgery

Complication	Rate
Pulmonary Collapse/Atelectasis	0.83%
Hemorrhage Complicating a Procedure	0.79%
Surgical Complication of Gastrointestinal System	0.79%
Accidental Operative Laceration	0.66%
Post-Operative Pulmonary Insufficiency	0.61%
Mortality	0.06%

MINIMIZING YOUR RISK OF COMPLICATIONS

1 **Learn more about your own personal risks**. Our report found that almost 6% of individuals undergoing bariatric surgery experienced an in-hospital complication. Discuss your individual surgical risks with your doctor and understand:

- What the clinical team will be doing to minimize those risks.
- What you can do before surgery and during your hospitalization to minimize your risks.

2 **Ask questions and be your own advocate**.

- Have your healthcare provider explain your condition and medications every step of the way.
- Ask for the results of all your tests and know your goal result for each test.
- Write down the name of the doctors and other healthcare providers participating in your care, and understand their roles to promote more coordinated care.
- Prior to checking in, make a list of all your medications, why you take them, and the dosage. Be sure to ask who to call if you have a question about your medication.
- Understand your care plan and goals while in the hospital and after discharge.

DOES BMI AFFECT COMPLICATIONS?

Patients with a very high body mass index (BMI) have additional considerations including:

- The need for open versus laparoscopic surgery.
- BMI ≥ 50 (**Super Obesity**): greater risk of an unsuccessful surgical outcome.
- BMI ≥ 60 (**Super-Super Obesity**): potentially longer surgery, recovery and follow-up times.

Table 7. Bariatric Surgery Complications and Lengths of Stay

Hospital Bariatric Surgery Star Rating	Actual In-Hospital Complication Rate	Expected In-Hospital Complication Rate	Actual-to-Expected Complication Ratio	Average Length of Stay (Days)	Total Billed Charges
1-Star	11.79%	6.40%	1.84	2.37	$44,418
3-Star	5.49%	5.61%	.98	2.01	$41,365
5-Star	3.03%	5.92%	.51	1.88	$41,229
U.S. Average	5.87%	5.87%	1.00	2.04	$41,848
Relative Difference Between 5-Star Compared to 1-Star			72.26%		
Relative Difference Between 5-Star Compared to 3-Star			47.79%		
Complications Potentially Avoided If All Hospitals Performed at 5-Star Level			5,788		

Surgical Treatments for Obesity

Bariatric surgery procedures incorporate one or two of the following surgical techniques that work in different ways to reduce the number of calories available to your body:

- **Restrictive procedures** (commonly known as gastric stapling, stomach stapling, or stomach banding) can help you lose weight by reducing the size of your stomach, which limits the amount of food you can eat at a given time.
- **Malabsorptive procedures** (commonly known as gastric bypass) can help you lose weight by altering the normal digestive process. In gastric bypass surgery, the stomach is attached directly to the middle of the small intestine. This allows food to bypass most or all of the first section of the small intestine (the duodenum), reducing the amount of calories and nutrients absorbed by the body.

Restrictive Bariatric Surgery Procedures

Adjustable Gastric Banding (AGB)

AGB (Lap-Band® surgery, gastric band surgery) is a restrictive procedure. It involves attaching an inflatable band around the top portion of the stomach and tightening it like a belt to form a small pouch that serves as a new, much smaller stomach. Your doctor adjusts the diameter of the inflatable band and size of the stomach by adding or removing saline (salt water). Several of these surgical adjustments may be required over time.

Weight loss with AGB is generally more gradual and less overall, compared with gastric bypass procedures, but reduction in other obesity-related conditions is similar.[11] AGB is popular due to its simplicity, adjustability, reversibility, and low complication rates. AGB is usually performed with laparoscopic (minimally invasive) techniques that use several very small incisions instead of one large one, reducing the risks of certain serious surgical complications. In addition, the stomach and small intestine still function normally, reducing the risk of poor nutrition, which can occur with malabsorptive (gastric bypass) procedures.

Vertical Banded Gastroplasty (VBG)

VBG is a restrictive procedure. It uses a combination of staples and a band to create a small stomach pouch. There is a dime-sized opening at the bottom of the "new" stomach that opens into the rest of the larger stomach. Plastic tissue or mesh is wrapped around the opening to help prevent the opening from stretching, which helps you feel fuller longer by allowing food to stay in the stomach longer.

VBG has a higher rate of complications compared to AGB and is not as effective as malabsorptive (gastric bypass) procedures.

Vertical Sleeve Gastrectomy (VSG)

VSG (gastric sleeve surgery, gastric sleeve resection, tube gastrectomy) is a restrictive procedure that effectively treats severe obesity by combining the nutritional benefits of a restrictive procedure with the weight-loss benefits of a malabsorptive (gastric bypass) procedure. It involves removing part of the stomach and using staples to create a smaller tube-shaped stomach.

CHOOSING THE RIGHT PROVIDER IS CRITICAL

To choose a provider, patients can:

1 **Look for a facility that has a 5-star rating** or other objective quality information. Do not rely solely on a recommendation from a friend.
- Results showed that a typical patient had, on average, an almost 72% lower chance of experiencing an in-hospital complication at a 5-star facility.

2 **Ask about the number of procedures performed** both at the facility and by the surgeon.
- The lowest in-hospital complication rates were found among facilities that had performed 375 surgeries or more during the three year period.

3 **Look for accreditation by the American College of Surgeons Bariatric Surgery Center Network**
- Accredited facilities must undergo a rigorous evaluation process, meet minimum volume requirements, ensure multi-disciplinary support, and track patient outcomes.
- Surgeons at accredited facilities must meet specific training requirements.

Find ratings for hospitals in your area.
www.healthgrades.com/find-a-hospital

SURGICAL TREATMENT FOR OBESITY

Read more about bariatric surgery including gastric bypass surgery and gastric stapling surgery.
www.bettermedicine.com/article/surgical-treatment-for-obesity

WHAT IS GASTRIC BYPASS SURGERY?

Gastric bypass surgery involves bypassing a part of the small intestine that absorbs nutrients. For this reason, these surgeries are referred to as malabsorptive procedures. **Learn more about gastric bypass surgery.**
www.bettermedicine.com/ treatments/gastric-bypass-malabsorptive-surgery-procedure

VSG is effective in achieving significant weight loss quickly and improving both type 2 diabetes and high blood pressure.[12] It controls hunger better than other restrictive procedures. VSG is performed with laparoscopic (minimally invasive) techniques that use several small incisions instead of one large incision, and does not leave a foreign object (mesh or band) in the body, reducing the risks of certain serious surgical complications. In addition, the stomach and small intestine still function normally, reducing the risk of poor nutrition, which can occur with malabsorptive (gastric bypass) procedures.

Malabsorptive/Restrictive Bariatric Surgery Procedures

Roux-en-Y Gastric Bypass (RGB)
RGB is both a malabsorptive and restrictive procedure. It involves stapling the stomach to create a small pouch that holds less food. The new stomach pouch is attached directly to the middle of the small intestine. This allows food to bypass much of the stomach and the first section of the small intestine (the duodenum), reducing the amount of calories and nutrients that are absorbed by the body.

RGB helps most people lose weight quickly and successfully, but is usually not appropriate if you are severely obese or have had prior abdominal surgery. Though often performed using open surgery, in some cases RGB may be performed with laparoscopic (minimally invasive) techniques that use several small incisions instead of one large incision. Compared to open surgery, laparascopic RGB is safer and can reduce surgical complications such as heart and lung problems, as well as the length of your hospital stay.[13] RGB risks include vitamin and mineral deficiencies that can lead to long-term complications, such as osteoporosis and anemia. Ongoing nutritional supplementation may be required.

Biliopancreatic Diversion With a Duodenal Switch (BPD-DS)
BPD-DS is both a restrictive and malabsorptive procedure that is effective for very severe obesity. It is a complex procedure that involves removing a large part of the stomach using the VSG procedure (see above), creating a bypass around a large part of the small intestine, and diverting bile and other digestive juices. The result is reduced digestion and significant weight loss.

BPD-DS effectively improves type 2 diabetes and can result in larger long-term weight loss than some other procedures.[14] However, it is not widely accepted as a first-line treatment in less severely obese patients due to its complexity and long-term risks. Like RGB, those risks include vitamin and mineral deficiencies that can lead to long-term complications, such as osteoporosis and anemia. Ongoing nutritional supplementation may be required.

How Do Bariatric Programs Support Successful Weight Loss?

Bariatric surgery is part of a lifelong commitment to lifestyle change. To enjoy the full weight-loss and health benefits from these major surgical procedures, patients should look for providers with a multidisciplinary approach to care. Look for a treatment plan that offers: an accredited program; pre-operative education; lifestyle modification (diet and exercise); support groups; and surgical follow-up care.

Who Is a Good Candidate for Bariatric Surgery?

Bariatric surgery may be an option for you if:

- Your body mass index (BMI) is 40 or higher **(Severe Obesity)**.
- Your BMI is 35 or higher **(Moderate Obesity)** and you have a serious weight-related health problem, such as diabetes, heart disease, or sleep apnea.
- You are motivated to complete all pre- and post-surgical activities including self-care, doctor appointments, nutritional and psychological counseling, and patient support group meetings.
- You are committed to lifelong lifestyle and behavioral changes including healthy exercise and dietary habits and possible vitamin supplementation.

Bariatric surgery is only one part of a comprehensive obesity treatment plan that includes lifelong healthy lifestyle changes and regular follow-up medical care. Your surgeon will determine if you are a good candidate for bariatric surgery, and advise you on which procedures and approach are best for you based on your specific circumstances.

OBESITY BASICS: WHAT IS IT? HOW IS IT TREATED?

Experts say there is an obesity epidemic in this country. But **what is obesity**?
www.localhealth.com/article/obesity

How is it measured? **Take this quiz** and see how much you know about obesity.
www.bettermedicine.com/topic/obesity/obesity-basics-what-is-it-how-is-it-treated

CALCULATE YOUR BMI

Body mass index (BMI) is a way to determine candidates for bariatric surgery. **Calculate your BMI**.
www.bettermedicine.com/article/determining-your-body-mass-index

COULD WEIGHT-LOSS SURGERY SAVE YOUR LIFE?

If you are obese, surgery to lose weight may be safer than carrying around those extra pounds. But is losing weight worth the risks associated with surgery? **Take a look at the latest research**.
www.bettermedicine.com/article/could-weight-loss-surgery-save-your-life

LOSE WEIGHT: SUCCESS SECRETS

Research shows a successful weight-loss plan is both a mind and body undertaking. It involves not only monitoring calories in and out, but also dealing with the psychology of habit change. **Learn more about weight-loss success secrets**.
www.bettermedicine.com/topic/obesity/living-with-obesity

KEEP THE WEIGHT OFF FOR LIFE

You've followed a disciplined weight-loss program to reach your healthy goal weight. **Now how do you keep the excess weight off–for life?**
www.bettermedicine.com/topic/obesity/maintain-a-healthy-weight-for-a-lifetime

FOR OBESE TEENS, SURGERY IS THE LAST RESORT

Experts estimate that extreme obesity plagues more than a million teens and young adults. **What can you do as a parent of an obese teenager?**
www.bettermedicine.com/article/for-obese-teens-surgery-is-the-last-resort

Healthgrades Bariatric Surgery 5-Star Hospitals and Bariatric Surgery Excellence Award Recipients 2012 by Designated Market Area

The following hospitals are 5-star rated in Bariatric Surgery. Also indicated are recipients of the Healthgrades Bariatric Surgery Excellence Award* in 2012, indicating that they were among the best 10% of hospitals meeting minimum volume requirements. Some of the hospitals have multiple locations. In these cases, results for all locations were used in the analysis and each of the facilities is designated as a 5-star hospital or a recipient of the award as indicated.

Designated Market Area	Award Recipients	Bariatric Surgery 5-Star Hospitals 2012*	City	State
Phoenix - Prescott, AZ	●	Flagstaff Medical Center	Flagstaff	AZ
	●	Surgical Specialty Hospital of Arizona	Phoenix	AZ
Bakersfield, CA		Kern Medical Center	Bakersfield	CA
Chico - Redding, CA		Enloe Medical Center	Chico	CA
Fresno, CA	●	Fresno Heart and Surgical Hospital	Fresno	CA
Los Angeles, CA		Cedars - Sinai Medical Center	Los Angeles	CA
		Community Hospital of Long Beach	Long Beach	CA
		Kaiser Permanente West Los Angeles Medical Center	Los Angeles	CA
		Marina Del Rey Hospital	Marina Del Rey	CA
		Orange Coast Memorial Medical Center	Fountain Valley	CA
		Palmdale Regional Medical Center	Palmdale	CA
	●	Providence Saint Joseph Medical Center	Burbank	CA
	●	Southwest Healthcare System - Rancho Springs Medical Center	Murrieta	CA
	●	*including:* Southwest Healthcare System - Inland Valley Medical Center	Wildomar	CA
		USC University Hospital	Los Angeles	CA
		Verdugo Hills Hospital	Glendale	CA
Sacramento, CA	●	Memorial Medical Center	Modesto	CA
	●	Mercy San Juan Medical Center	Carmichael	CA
		Sutter General Hospital	Sacramento	CA
		including: Sutter Memorial Hospital	Sacramento	CA
San Diego, CA	●	Pomerado Hospital	Poway	CA
	●	Scripps Mercy Hospital	San Diego	CA
	●	*including:* Scripps Mercy Hospital Chula Vista	Chula Vista	CA
San Francisco-Oakland, CA	●	California Pacific Medical Center - Pacific	San Francisco	CA
	●	*including:* California Pacific Medical Center - California	San Francisco	CA
	●	El Camino Hospital	Mountain View	CA
	●	*including:* El Camino Hospital Los Gatos	Los Gatos	CA
	●	Good Samaritan Hospital	San Jose	CA
		John Muir Medical Center - Concord	Concord	CA

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Designated Market Area	Award Recipients	Bariatric Surgery 5-Star Hospitals 2012*	City	State
San Francisco-Oakland, CA continued	●	Kaiser Permanente Hayward Medical Center	Hayward	CA
	●	*including:* Kaiser Permanente Fremont Medical Center	Fremont	CA
	●	Kaiser Permanente Oakland Medical Center	Oakland	CA
	●	*including:* Kaiser Permanente Richmond Medical Center	Richmond	CA
	●	Kaiser Permanente South San Francisco Medical Center	South San Francisco	CA
	●	Peninsula Medical Center	Burlingame	CA
	●	*including:* Mills Health Center	San Mateo	CA
		Saint Mary's Medical Center	San Francisco	CA
Santa Barbara, CA		Santa Barbara Cottage Hospital	Santa Barbara	CA
Denver, CO	●	Rose Medical Center	Denver	CO
Miami-Ft. Lauderdale, FL	●	Hialeah Hospital	Hialeah	FL
	●	Palmetto General Hospital	Hialeah	FL
	●	University of Miami Hospital	Miami	FL
Mobile, AL-Pensacola, FL		Baptist Hospital	Pensacola	FL
	●	Sacred Heart Hospital	Pensacola	FL
Orlando, FL	●	Ocala Regional Medical Center	Ocala	FL
	●	*including:* West Marion Community Hospital	Ocala	FL
Tampa-St. Petersburg, FL		Brandon Regional Hospital	Brandon	FL
	●	Heart of Florida Regional Medical Center	Davenport	FL
		Pasco Regional Medical Center	Dade City	FL
Cedar Rapids, IA		University of Iowa Hospital and Clinics	Iowa City	IA
Boston, MA		Emerson Hospital	Concord	MA
	●	Lowell General Hospital	Lowell	MA
		Newton - Wellesley Hospital	Newton	MA
		Saint Vincent Hospital	Worcester	MA
	●	UMass Memorial Medical Center - University Campus	Worcester	MA
	●	*including:* UMass Memorial Medical Center - Hahnemann	Worcester	MA
	●	UMass Memorial Medical Center - Memorial Campus	Worcester	MA
Providence, RI: MA Hospitals		Southcoast Hospitals Group - Charlton Memorial	Fall River	MA
		including: Southcoast Hospitals Group - St. Luke's Hospital	New Bedford	MA
		Southcoast Hospitals Group - Tobey Hospital	Wareham	MA
Baltimore, MD		Saint Agnes Hospital	Baltimore	MD
Greensboro, NC		Wake Forest University Baptist Medical Center	Winston Salem	NC

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Designated Market Area	Award Recipients	Bariatric Surgery 5-Star Hospitals 2012*	City	State
Raleigh-Durham, NC		Firsthealth Moore Regional Hospital	Pinehurst	NC
		including: Firsthealth Richmond Memorial Hospital	Rockingham	NC
		Rex Hospital	Raleigh	NC
Wilmington, NC		New Hanover Regional Medical Center	Wilmington	NC
		including: Cape Fear Hospital	Wilmington	NC
New York, NY: NJ Hospitals		Morristown Medical Center	Morristown	NJ
	●	Mountainside Hospital	Montclair	NJ
	●	Saint Peter's University Hospital	New Brunswick	NJ
		Southern Ocean Medical Center	Manahawkin	NJ
Philadelphia, PA: NJ Hospitals		Virtua Berlin	Berlin	NJ
		including: Virtua Health - West Jersey Hospital - Camden	Camden	NJ
		Virtua Marlton	Marlton	NJ
		Virtua Health - West Jersey Hospital - Voorhees	Voorhees	NJ
Las Vegas, NV		Desert Springs Hospital Medical Center	Las Vegas	NV
	●	North Vista Hospital	North Las Vegas	NV
	●	Saint Rose Dominican Hospital - Rose de Lima Campus	Henderson	NV
Reno, NV		Renown South Meadows Medical Center	Reno	NV
Buffalo, NY	●	Sisters of Charity Hospital	Buffalo	NY
	●	*including:* Sisters of Charity Hospital - St. Joseph Campus	Cheektowaga	NY
New York, NY		Bellevue Hospital Center	New York	NY
		Bon Secours Good Samaritan Hospital of Suffern	Suffern	NY
	●	Brooklyn Hospital Center at Downtown	Brooklyn	NY
	●	John T. Mather Memorial Hospital	Port Jefferson	NY
		Maimonides Medical Center	Brooklyn	NY
		New York Hospital Medical Center of Queens	Flushing	NY
		New York Methodist Hospital	Brooklyn	NY
		NYU Langone Medical Center	New York	NY
		South Nassau Communities Hospital	Oceanside	NY
	●	Westchester Medical Center	Valhalla	NY
Syracuse, NY		University Hospital SUNY Upstate Medical University	Syracuse	NY
Utica, NY	●	Faxton St. Luke's Healthcare	Utica	NY
Eugene, OR		Bay Area Hospital	Coos Bay	OR
Johnstown-Altoona, PA		Windber Medical Center	Windber	PA
Philadelphia, PA	●	Barix Clinics of Pennsylvania	Langhorne	PA
		Easton Hospital	Easton	PA
	●	Einstein Medical Center - Philadelphia	Philadelphia	PA
	●	*including:* Einstein Medical Center - Germantown	Philadelphia	PA

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Designated Market Area	Award Recipients	Bariatric Surgery 5-Star Hospitals 2012*	City	State
Philadelphia, PA continued	●	Hospital of the University of Pennsylvania	Philadelphia	PA
		St. Luke's Hospital - Bethlehem Campus	Bethlehem	PA
		including: St. Luke's Hospital - Allentown Campus	Allentown	PA
	●	Temple University Hospital	Philadelphia	PA
	●	*including:* Temple University Hospital - Episcopal	Philadelphia	PA
		Thomas Jefferson University Hospital - Center City Campus	Philadelphia	PA
		including: Methodist Hospital	Philadelphia	PA
Pittsburgh, PA		Western Pennsylvania Hospital	Pittsburgh	PA
Wilkes Barre - Scranton, PA		Palmerton Hospital	Palmerton	PA
Dallas - Ft. Worth, TX		North Texas Hospital	Denton	TX
		Pine Creek Medical Center	Dallas	TX
	●	Vista Hospital of Dallas	Garland	TX
El Paso, TX		Las Palmas Medical Center	El Paso	TX
		including: Del Sol Medical Center	El Paso	TX
Houston, TX	●	Bayshore Medical Center	Pasadena	TX
		First Street Hospital	Bellaire	TX
		North Cypress Medical Center	Cypress	TX
		St. Anthony's Hospital	Houston	TX
Laredo, TX		Laredo Medical Center	Laredo	TX
Lubbock, TX		Covenant Medical Center - 19th Street	Lubbock	TX
		including: Covenant Medical Center - Lakeside	Lubbock	TX
	●	University Medical Center	Lubbock	TX
San Antonio, TX		Victroy Medical Center - San Antonio	San Antonio	TX
Victoria, TX	●	Citizens Medical Center	Victoria	TX
Wichita Falls, TX	●	United Regional	Wichita Falls	TX
Norfolk, VA	●	Bon Secours - Maryview Medical Center	Portsmouth	VA
	●	Chesapeake Regional Medical Center	Chesapeake	VA
	●	Sentara Careplex Hospital	Hampton	VA
Washington, DC: VA Hospitals	●	Inova Fair Oaks Hospital	Fairfax	VA
		Sentara Potomac Hospital	Woodbridge	VA
		Winchester Medical Center	Winchester	VA
Green Bay - Appleton, WI		Theda Clark Medical Center	Neenah	WI
La Crosse - Eau Claire, WI	●	Gundersen Lutheran Medical Center	La Crosse	WI
Wausau, WI		Aspirus Wausau Hospital	Wausau	WI

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