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Bariatric Surgery: Lindsey G's Story

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Photos in this article include models who do not represent actual patients.

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More than 1 in 3 adults in the United States were obese in 2010, according to the National Health and Nutrition Examination Survey.[1] The World Health Organization reports that, worldwide, more than 300 million people are obese, and more than 1.5 billion people are overweight.[2]

The epidemic of obesity, defined as a body mass index (BMI) of more than 30, is worsening. Since 1980, the prevalence of obesity has doubled throughout the world.[2]

The US Surgeon General has estimated a 50% to 100% increased risk of early death for obese individuals compared to patients with a BMI between 20 and 25, with more than 300,000 deaths yearly associated with obesity.[3] A gain of 11 to 18 pounds will double an individual's risk of type 2 diabetes mellitus (T2DM) compared to an individual without that weight gain.[3] This risk is quadrupled if a person has gained 44 or more pounds. Sleep quality, mood, and overall quality of life are also adversely influenced by obesity.[3]

The reasons for these obesity trends are multifactorial. For example, there is a widespread prevalence of high-calorie foods, which are often much cheaper than healthier options. In another example, many restaurants have increased their portion sizes throughout the years. Also—as has always been the case—many people may eat more than they normally would to celebrate good news, as well as to cope with bad news and stressors in everyday life.

The mass media often focuses on unhealthy, though stylish, body images, which may cause unrealistic expectations for patients' self-images. Most people in the United States have at some time followed a diet in an effort to lose weight. The weight-loss industry is a multibillion dollar business. Many people find initial success with diets, but many also regain the weight that has been lost, and the vast majority of dieting individuals are unable to maintain a healthy weight.[4] Medications have not been proven successful in the long-term treatment of obese patients. In fact, medications may have undesired, potentially harmful effects in many patients.

> In the United States, more than 300,000 deaths yearly are associated with obesity.

Advances in the surgical treatment of obese patients have made surgical options safer and more widely available. However, many factors must be considered before referring a patient for a surgical procedure. In the present article, we do not intend to suggest surgery as a solution for all overweight patients, but rather we wish to reveal an actual patient's point of view and attitudes toward weight loss and surgery.

Lindsey's obesity and diabetes mellitus

A systematic review of the literature demonstrates that bariatric surgery can be efficacious in the treatment of patients with obesity and some of obesity's comorbidities.[5] A patient of 1 of the authors (G.J.D.) underwent this procedure and was willing to share her story. Her real name will remain confidential, but we will refer to her as "Lindsey G." Her story reveals the challenges and thought processes that she went through before electing a surgical treatment for her obesity—the laparoscopic adjustable gastric band (LAGB) procedure.

The US Food and Drug Administration (FDA) approves LAGB for weight loss in obese adults with a BMI between 30 and 40, provided the adults have at least 1 obesity-related medical condition and have not achieved success with nonsurgical weight-loss methods (ie, lifestyle and behavior modification). The FDA also approves LAGB for patients with a BMI greater than 40 and patients who are 100 or more pounds overweight.[6]

Lindsey was diagnosed as having T2DM in autumn 2009, at age 37 years. At that time, she weighed 479 pounds and was 69 inches (5 feet, 9 inches) tall. She took the

diagnosis in stride, deciding to take action to decrease her reliance on medication and to avoid potential comorbidities of T2DM. Her husband and son were instrumental in providing moral support and in encouraging her to exercise. Lindsey tried to decrease portion size, and she gave up the nachos that she enjoyed eating. After obtaining a cardiac evaluation, she also began an exercise program, which initially consisted of walking outdoors. After she was able to walk several blocks, she added the use of a treadmill during periods of inclement weather.

Lindsey experienced mild aches and pains as her body acclimated to these activities. She would come in for osteopathic manipulative treatment for her back pain about once every 2 months. One day on the treadmill, she "stepped funny" and injured her left knee. This injury disrupted her exercise routine, and she became very frustrated. The orthopedic surgeon told her that she would eventually need surgical repair of her torn meniscus, along with femoral chondroplasty. For the present, however, the surgeon told her that he did not wish to do the surgery because of her excessive weight and risks for postoperative complications. He advised her to focus her efforts on weight loss. She diligently performed rehabilitation exercises for her knee, which helped relieve her knee pain, but she was not losing weight as fast as she would have liked. As Lindsey's primary care physician, I (G.J.D.) explained to her that it was important to lose weight safely and gradually, and I suggested that she focus on small, achievable goals.

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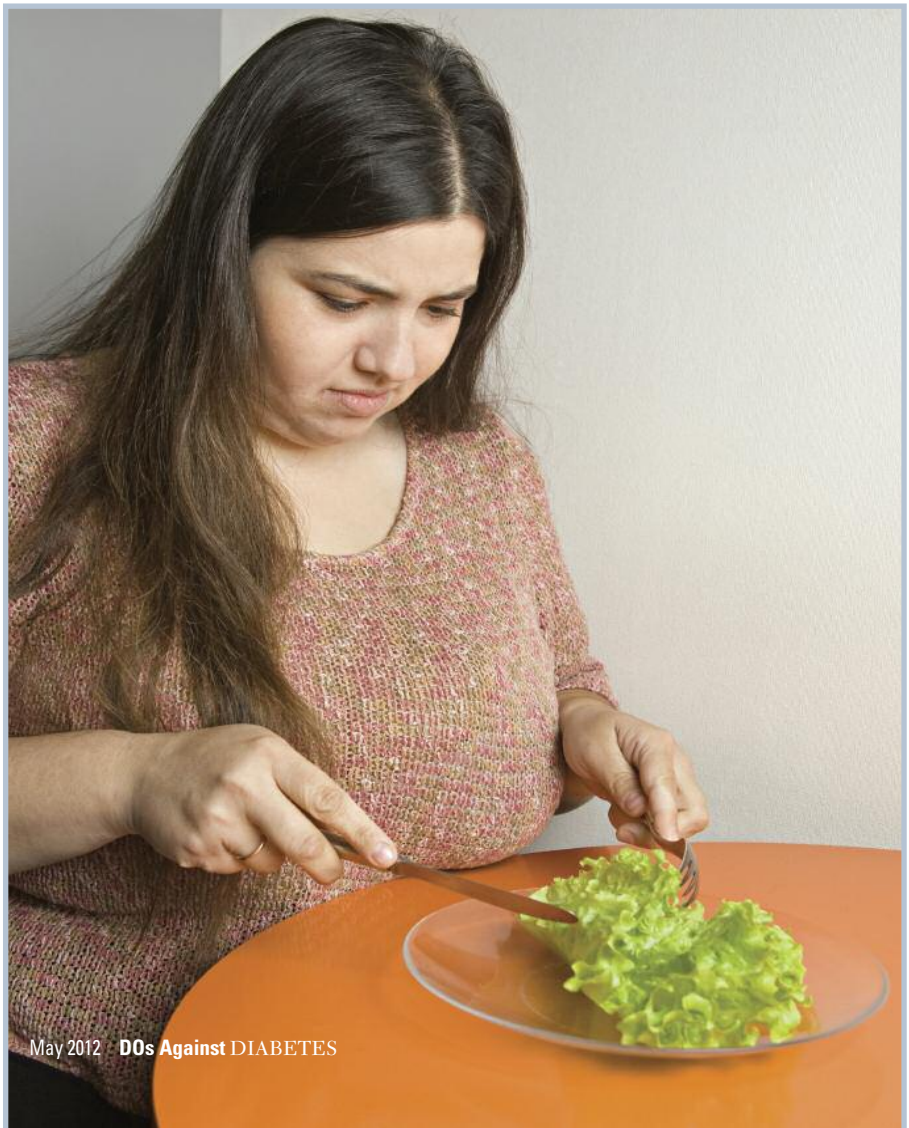

Lindsey sought a second opinion from an orthopedic surgeon regarding surgery for her knee. That surgeon agreed to the operation, and Lindsey underwent a partial meniscectomy and chondroplasty of her knee in April 2011. She faithfully continued to rehabilitate the knee after the surgery. Her family was supportive throughout her treatment.

Decision for bariatric surgery

In October 2010, Lindsey underwent LAGB bariatric surgery. The decision to undergo the surgery was based on Lindsey's personal wishes. She discussed the surgery with her primary care physician (G.J.D.), and was well aware of the risks and potential benefits. At the time of the surgery, her weight was 417 pounds, and her BMI was 63.4. Similar to many obese patients, Lindsey's list of medical conditions at this time consisted of T2DM as well as hypertension, hyperlipidemia, diabetic neuropathy, depressive disorder, chronic pain, obstructive sleep apnea (OSA), sciatica, and gout. She was using a continuous positive airway pressure (CPAP) machine to manage her OSA, and she was taking the following 13 medications for her other conditions. (She had also tried other, weight-neutral antidiabetic agents, but she quit using them because of adverse effects.)

A table describing Lindsey's daily prescription medication regimen is on page 22.

When Lindsey was asked what diet she tried to help her lose weight before she chose to undergo bariatric surgery, she answered, "To be honest, I probably tried everything out there. I have done every diet imaginable. I tried taking Alli [orlistat; GlaxoSmithKline, Middlesex, England], Slim-Fast [Unilever, London, England], not eating meat. I even tried eating, then purging my food."

Lindsey described how she finally determined that bariatric surgery was necessary:

It takes a long time before you decide to have the surgery. I got to a point where I knew I didn't need to just do it for myself, but for my family too. I have a son and I'm married. But you have to do it for yourself, when you are ready. You can't do it only for

Table. Prescription Medication Regimen

Medication	Dosage/Administration
—albuterol sulfate	as necessary
—allopurinol sodium 300 mg	orally once daily
—alprazolam 0.5 mg	orally twice daily as necessary
—citalopram hydrobromide	20 mg orally once daily
—cyclobenzaprine hydrochloride	10 mg orally 3 times daily as necessary
—glyburide	5 mg orally once daily
—insulin glargine	40 U subcutaneously once daily at bedtime
—insulin lispro	100 U/mL subcutaneously on sliding scale (used briefly postoperatively)
—lisinopril	10 mg orally once daily
—metoprolol tartrate	100 mg orally twice daily
—oxycodone hydrochloride	5 mg orally every 6 hours as necessary (used briefly postoperatively)
—pregabalin	50 mg orally once daily
—simvastatin	40 mg orally once daily at bedtime

Lindsey's goal was—and still is—to defeat her son at a game of 1-on-1 basketball.

Bariatric surgery results

Before undergoing bariatric surgery, Lindsey required insulin to maintain her blood glucose level, and her glycosylated hemoglobin (HbA1c) level was 6.4%. After the surgery she was able to discontinue insulin and maintain her blood glucose and HbA1c levels by taking only metformin 500 mg orally twice daily. With further diet, exercise, and weight loss, no medications were needed for these purposes by November 2011. At this time, her HbA1c level was 5.7%, and her pre- and postprandial glucose levels stayed in the range of 86 to 90 mg/dL with diet and exercise alone.

Lindsey's positive experience is confirmed by the literature, which suggests that most patients have greatly improved glucose control after bariatric surgery. In some cases, patients may even experience,

someone else, because it won't work. I knew I needed to do it when I hit my top weight of 479 pounds a year before the surgery. I got down to 417 pounds before the surgery. I took a year to improve myself and do exactly what I needed to do, eat the right portion size. You have to be committed to do your part. You have to love yourself first. If you are not doing it to better yourself, then why do it?

Lindsey summarized her no. 1 reason for undergoing the surgery: "My goal was to get off the medications. I was tired of so many pills each day. The weight loss part was important too, but not the biggest issue."

The process is easier if patients have support at home. For Lindsey, her family is her support system, as she explained:

My husband told me that he would love me no matter what size I am, but that he would support me to lose weight because that is what I wanted to do. My husband and son both support me so much. It is a household effort. We eat at home instead of going out, eat healthy portion sizes by using saucers, and we exercise together. My son is like my coach. We are all getting healthy together.

as Lindsey did, a "cure," with more than 50% of patients who had diabetes mellitus no longer having diabetes symptoms.[6] Other parameters that have shown improvement after bariatric surgery include lipid levels and blood pressure levels. More than 50% of postsurgery patients no longer require medication to manage their hypertension or are able to reduce their doses of antihypertensive medication.[8]

> "My goal was to get off the medications. I was tired of so many pills each day."
>
> —*Lindsey G.*

Lindsey was able to discontinue use of simvastatin and to maintain adequate cholesterol control with diet and exercise alone, which was reflective of her decreased weight. In March 2010, Lindsey's blood pressure was 142/82 mm Hg while taking metoprolol 100 mg twice daily and lisinopril 10 mg daily. In November 2011, her blood pressure was 126/74 mm Hg despite discontinuation of these 2 antihypertensive medications. As with lipids, blood pressure improves following loss of weight, and in November 2011, Lindsey's weight was down to 296 pounds.

Lindsey is no longer taking any antidepressant or antianxiety medications, and she states that she is "doing great, and I know I can always go back to my counselor if I start feeling bad again." In addition, her food-purging behavior is absent. Some of her improved mood may be attributed to improved self-image, and Lindsey states that she is no longer uncomfortable being in public—which had been a problem for her before surgery.

When asked what she had wanted from the surgery, Lindsey answered as follows: I wanted to do all the things I was afraid to do because of my weight. I wanted to run and ride a bike with my son, to go to Worlds of Fun [a local amusement park] with my son and actually ride on a ride, and I wanted to not have to buy 2 seats for myself on an airplane anymore.

Obese patients may give up social events and isolate themselves, vastly decreasing their quality of life. With her weight loss, Lindsey was able to go out and enjoy previously pleasurable activities again.

At the time the present article was being written, Lindsey said she was looking forward to a follow-up sleep evaluation to determine if she still had OSA. She was eager to discontinue her use of the CPAP machine, which is bulky and uncomfortable. Studies show that approximately half of obese patients experience a form of sleep disturbance. After weight-loss surgery, there is a substantial decrease in the prevalence of patients with sleep apnea, snoring, and sleep deprivation.[8] Lindsey also reports no episodes of gout since having undergone bariatric surgery.

Diet and exercise

When asked to describe her current diet, Lindsey responded as follows:

I really don't eat very much, because I am just not hungry like I used to be. I eat healthy small portions and use a saucer instead of a plate. When I used to fix a plate, it was a portion for 3 people. A saucer holds one serving size. I don't eat bread. I don't drink anything 2 hours before eating so that I am not full from liquids before meals and only take small sips of water while eating. Also, I let my silverware rest. I set my silverware down after taking a bite. People tend to take a bite of food, and then take the silverware and scoop it back up again before they have even swallowed. That can lead to overeating.

Lindsey discussed her typical exercise routine:

I exercise every day. I ride bikes with my son and walk outside or on the treadmill,

but water exercises at the YMCA are the best for my back. It may not sound like much, but now we park as far away from the store as we can just to get the extra steps in. I do everything I can to keep my body moving, because there were so many things that I could not do, but now I can. Nothing is going to stop me now!

Lindsey explained the reactions she has received from people since her weight-loss surgery:

People tell me every time they see me that I look like I have lost weight since they saw me last. They are motivated by me and want to lose weight too. I tell them to start inside their home, and then change outside their home. You cannot eat whatever you want and think that you can walk it off afterward—that isn't how it works. You have to change how you eat first. Portion size it so important, and also exercise. You have to continually push yourself.

When asked to describe her current medical problems, she said, "The only problem I still have is back pain. My physicians want me to have back surgery, but I am going to continue to lose my weight first. I do not want anything to get in the way of my goal. I am 294 pounds now, but my goal weight is 150 pounds."

Lindsey stated that she has had no adverse effects from her bariatric surgery. She summarized the impact that the surgery has had on her life as follows:

I can do so much more. I am so much happier. I can jump rope now and shoot baskets with my son and nephew. LAGB has done so much for me. But really, it was just the beginning, because you still have to exercise and eat right. For it to be a success, a combination of things has to happen. LAGB will work for anyone who does what they are supposed to do. I know people who got the Lap-band and you just want to smack them, because they were not ready to take it seriously. It isn't what they did, it is what they didn't do. They didn't eat right, didn't exercise, and didn't do their part. They are heavier than they were before the surgery. What a waste of money!

> "The only problem I still have is back pain. My physicians want me to have back surgery, but I am going to continue to lose my weight first.
>
> —*Lindsey G.*

Lindsey paid $2500 for her bariatric surgery, while insurance covered the remaining $14,000. She explained the struggle of paying for the surgery:

It was a long process. I have Medicaid and Medicare, but a secondary insurance was required and I had Blue Cross/Blue Shield. So I thought I was completely covered, but 2 weeks before the surgery, they [Blue Cross/Blue Shield] said I wasn't. They said they were sorry and there was nothing they could do. They would cover gastric bypass, but not Lap-Band, but I didn't want that [gastric bypass] surgery. At one point, I called the hospital to cancel my surgery, because I did not have the 10% that was not covered, but the surgeons let me do a promissory note, and now I just pay $100 each month until it is paid for.

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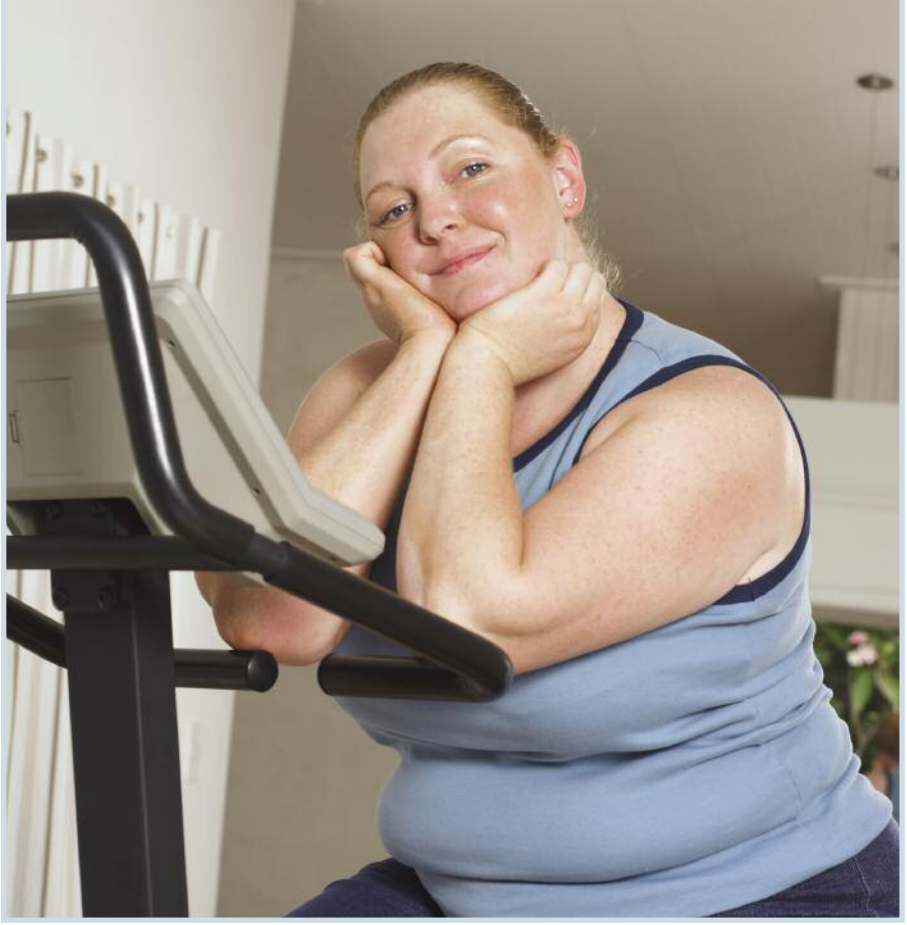

Final notes

In January 2012, Lindsey weighed 294 pounds, and her BMI was 44.7. She is right on track for expected weight loss. Studies show that after LAGB surgery, a substantial number of patients have lost as much as 43% of their excess weight at 12-year follow-up.[8]

The decision to have bariatric surgery should be made only after the patient has tried other modalities for weight loss, and the physician needs to consider each patient's individual circumstances before recommending or agreeing to such surgery, with due deliberation given to the risks. Although beyond the scope of the present article, there are many contraindications for, and complications of, bariatric surgery.

The decision to have bariatric surgery should be made only after the patient has tried other modalities for weight loss.

In response to the question of what medications she currently takes, Lindsey proudly said, "I'm only taking prenatal vitamins." Her primary motivation for having the surgery was to become healthy enough to not need medications. She has reached her goal and has discontinued every medication she had been taking for her previous comorbidities of obesity.

Lindsey's life was changed dramatically after having LAGB surgery. She remains dedicated to contributing to her weight loss through diet and exercise. She also plans to participate in organized walks to raise awareness and money for diabetes mellitus research. Lindsey is determined to stay healthy, which she believes will help her become a better mother.

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Jaclyn E. Allred, OMS IV, will receive her DO degree from Kansas City University of Medicine and Biosciences in May 2012, along with a master's degree in bioethics. In 2012, Student Doctor Allred participated in a medical mission to Guatemala, along with Dr. Desai. In Guatemala, she served as the student leader for the mission, which was conducted in conjunction with DOCARE International. She will be entering a psychiatry residency program at the University of Kansas in July 2012.

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