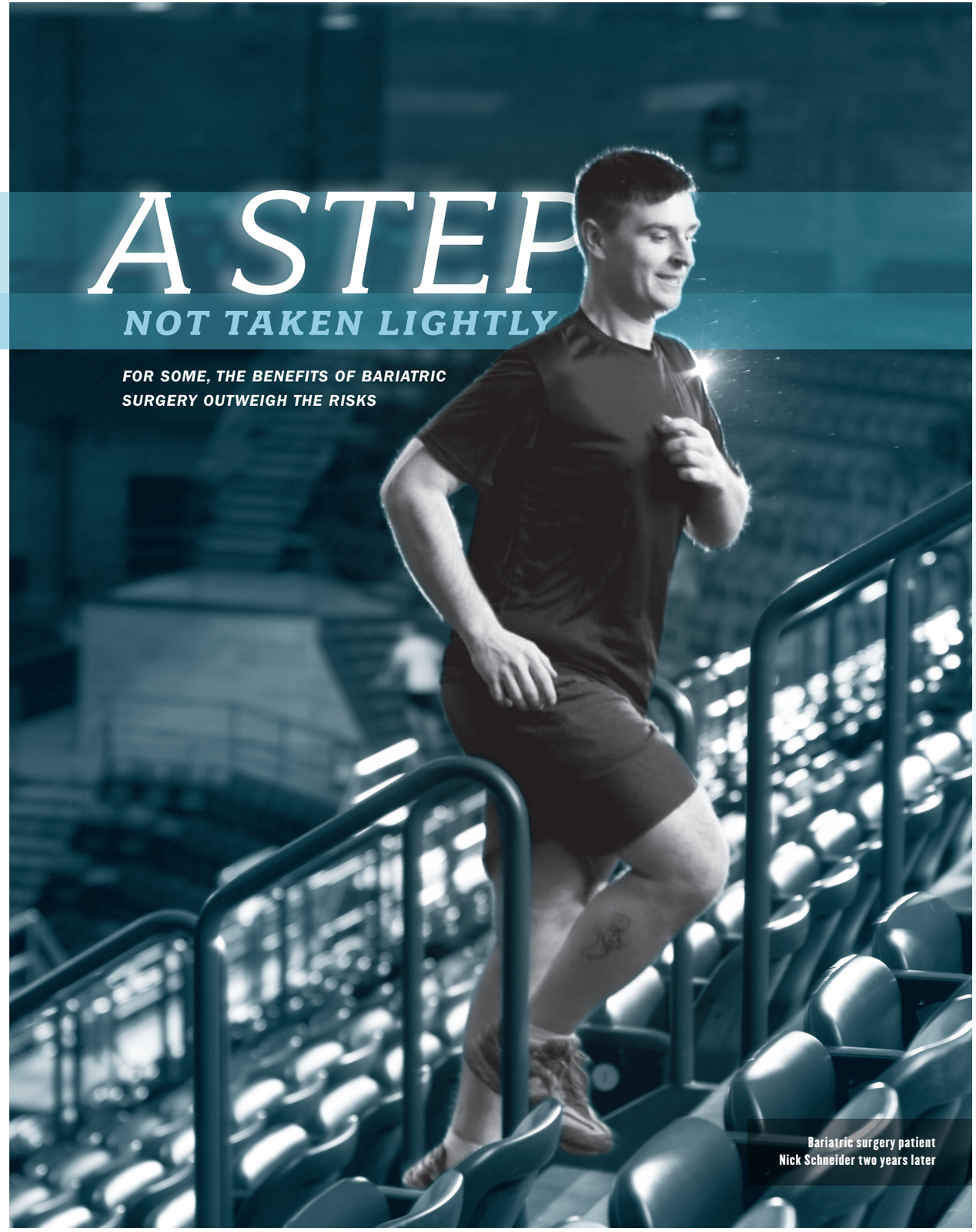

Bariatric surgery patient Nick Schneider two years later

A STEP NOT TAKEN LIGHTLY

FOR SOME, THE BENEFITS OF BARIATRIC SURGERY OUTWEIGH THE RISKS

Story by Nicole Peradotto

Photos by Douglas Levere

NICK SCHNEIDER remembers the day he stepped on the scale and it read 412 pounds. The nurse recording his weight warned him that he would die if he didn't have bariatric surgery.

He was 22 years old.

Seven years later, the boy who was last to be picked for teams in gym class is training for a triathlon. Rather than sustaining himself with Big Macs, he eats three ounces of lean protein at each of his five daily meals.

Hanging in Schneider's closet is a pair of pants with a 58-inch waist—a relic of his former self.

"The most exciting part of this whole process was buying my first shirt that didn't have any 'Xs' on the label," says Schneider, who lost 200 pounds after undergoing open gastric bypass surgery in 2008.

"I go to a restaurant now and I don't feel like people are looking at me saying, 'He doesn't need to eat.' I'm at my sixth-grade weight."

EPIDEMIC PROPORTIONS

For Schneider and thousands of Western New Yorkers, bariatric surgery is the option of last resort—a drastic measure to bring body mass index into a healthy range while potentially reversing diabetes, hypertension and other comorbid conditions that constitute obesity's heaviest burdens.

Although weight-loss surgery carries risks of short- and long-term complications, it's in great demand. According to the American Society for Metabolic and Bariatric Surgery (ASMBS), the rate of patients having such procedures doubled in a six-year period, with 220,000 performed in the United States in 2008.

Several factors are contributing to the demand. The refinement of minimally invasive surgical techniques makes weight-loss surgery attractive to patients reluctant to undergo open procedures. Intense marketing campaigns for the surgery—one of the rare procedures on which hospitals can make a profit—have brought it to the public's attention, as has the buzz created by celebrities' experiences, including those of American Idol judge Randy Jackson and TV personality Star Jones.

ENDORSED by a federal advisory panel in 1991, bariatric surgery today costs between $20,000 and $25,000. In recent years it has been covered by an increasing number of health insurance providers, as well as Medicare and Medicaid, for patients who qualify.

And millions do. The nation's heft has reached epidemic proportions, with about 30 percent of Americans classified as obese and 3 percent as morbidly obese, defined as having a body mass index of 40 or higher. Although obesity rates have remained constant for several years, experts warn that the plateau is hardly cause for celebration. Rather, it may be an indication that we've reached the biological limit to how fat we can get.

> **"IT'S PRETTY DRAMATIC TO SEE SOMEONE WHO'S GONE FROM 340 POUNDS TO 180, BUT WE DON'T DO ANY OF THIS FOR COSMETICS. IT'S TO EXTEND LIFE. AND SECOND ONLY TO STOPPING SMOKING, NOTHING EXTENDS LIFE MORE THAN BARIATRIC SURGERY FOR THESE PATIENTS."**
>
> —AARON HOFFMAN, MD '98

Locally, some bariatric surgeons report waiting lists of patients seeking the surgery. Perhaps that should come as little surprise in a city whose culinary claim to fame is the chicken wing. Other factors conspiring against Western New York's collective waistline include the region's protracted winter, the rich cuisine native to many of the area's ethnic groups, the high ratio of restaurants to residents and the significant level of poverty, an economic factor often implicated in overweight.

UB physicians who perform bariatric surgery say the primary reason the procedures are so popular here, and elsewhere, is simple: they work.

"It's pretty dramatic to see someone who's gone from 340 pounds to 180, but we don't do any of this for cosmetics," says Aaron Hoffman, MD '98, assistant professor of surgery. "It's to extend life. And second only to stopping smoking, nothing extends life more than bariatric surgery for these patients."

Hoffman, a fellowship-trained laparoscopic surgeon, practices at Buffalo General Hospital in Kaleida Health's Comprehensive Weight Loss & Bariatric Surgery Program, the region's first to offer laparoscopic bariatric surgery. Last year, 360 patients elected to have weight-loss surgery there, many referred by other patients or primary care physicians.

"Cardiovascular disease and diabetes are prevalent in this town, and the medical doctors are at the end of their abilities," Hoffman says. "All of the insulin they're giving their patients is not getting to the root of the problem. Unlike most doctors, we can say that we actually cure diabetes 85 percent of the time. We can cure sleep apnea, hypercholesterolemia, hypertension. These are the ravages of obesity, and these are the reasons that we do it."

RISKS TO WEIGH

Expectedly, critics of bariatric surgery are not enthusiastic about the growing number of bariatric surgery programs nationwide—or forecasts that it may become the next front in the fight against pediatric obesity. They consider it a radical procedure whose risks outweigh the benefits for the majority of patients who undergo it. Complications from bariatric surgery may occur acutely, in the short term or years later. In gastric bypass problems can range from diarrhea and vomiting to abdominal hernias, anastomotic leaks and neurologic disorders, including myelopathy and encephalopathy. Vomiting is also a reported complication with gastric banding, as is band dilation, displacement, and erosion, sometimes resulting in reoperation. In both surgeries, food intolerance may develop among patients.

"Many people can't eat meat or they have to put meat tenderizer on it and cut it into very tiny pieces," says Paul Ernsberger, PhD, associate professor of nutrition at Case Western Reserve University. "Trying to get enough fiber can be a real problem after gastric bypass because you're limited in the amount you eat, and any fiber is delivered deep into the intestine, which can cause painful distension."

Ernsberger, who favors conservative medical treatment of obesity, says weight-loss surgery is neither as safe nor as effective as it is touted to be. "I have talked to a great many people (after surgery) who are close to their starting weight and have severe complications," he says. "They really have the worst of both worlds: they don't have the thin body they were promised and they don't have improved health—they have worse health."

A researcher in genetic obesity and the role of nutrition in cardiovascular disease, Ernsberger is particularly concerned that the procedure alters the way the body absorbs nutrients, which can result in an array of nutritional deficiencies.

"Until gastric bypass became popular, conditions like beriberi and pellagra and kwashiorkor were unheard of outside Third World countries," Ernsberger says. "Outside Ethiopia and Sudan, you wouldn't see these things. Now they're endemic."

Ernsberger believes bariatric surgery may be suitable for the sickest patients; for example, a man with a BMI of more than 50 who has unmanageable diabetes. However, only a minority of patients who choose bariatric surgery fall into that category.

"The typical patient is a 35-year-old white middle-class woman with a BMI of 35 who doesn't have severe disease. This profile precisely correlates with people getting cosmetic surgery. The demographics track exactly."

GOOD OPTION OF LAST RESORT

Weight-loss surgeries fall into two categories: those that are malabsorptive and those that are restrictive. Gastric bypass surgery, a malabsorptive procedure, redesigns the anatomy of the normal digestive process in the stomach and intestines to reduce food intake and the amount of calories the body absorbs. With this type of surgery, a patient typically loses the majority of weight within a year to a year and a half.

Restrictive procedures, such as adjustable gastric banding, make the stomach smaller so patients feel full faster. Patients shed the majority of pounds in the first two to three years after this procedure.

To be eligible for bariatric surgery under guidelines established by the National Institutes of Health, a patient should be at least 18 years old and have a BMI of greater than 40—which averages about 100 pounds overweight for a man and 80 pounds for a woman—or greater than 35 if comorbid conditions like sleep apnea or heart disease are present. Additionally, individuals are expected to demonstrate that efforts at dieting have been ineffective.

"You basically have to be a failure—you have to be a failure at years of medical weight-loss attempts, many times physician-supervised," says Joseph A. Caruana, MD, clinical associate professor of surgery. "It's hard to go through life with that kind of label."

Caruana is medical director and surgeon at Synergy Bariatrics, Catholic Health System's bariatric surgery practice at Sisters of Charity Hospital, where he has been performing open gastric bypass surgery since 2000. In that time, he says, the skepticism he initially encountered from primary care physicians leery of weight-loss surgery has given way to gratitude.

"I got into this because I felt the procedure was tested and had good results, and that these patients were in some ways disenfranchised—many times by their own physicians," Caruana says. "The sentiment was that the patients weren't trying hard enough. But we slowly began to get physicians on board as they saw the outcome. Now I have physicians telling me that it's fortunate that there is this option."

Schneider, one of Caruana's patients, says surgery was his only recourse.

On a recent Tuesday evening he took his seat at a bariatric surgery support group held at Synergy Bariatrics' suburban office in Williamsville. The smell of gourmet coffee wafted through the room, but most of the 35 people gathered—a mix of former and prospective patients, predominantly female—favored protein shakes or water.

Nick Schneider weighed more than 400 pounds by the time he was in his early 20s. Since having bariatric surgery in 2008, he has lost 200 pounds and is now at his sixth-grade weight. Today, he is training for his first triathlon.

AT EVERY TABLE, participants shared stories of triumph and heartache. The mother of a 7-year-old boy recalled the humiliation of having to get off a rollercoaster when the seatbelt wouldn't fit over her stomach. "I was embarrassed for my son," she said. "I don't want to be that mom anymore—the one who has to sit out and say, 'I can't do it, honey.'"

Cheers broke out when another woman shared her latest fitness milestone: 20 minutes on an elliptical trainer. Still another was applauded after announcing that her doctor had taken her off insulin.

Like many at the meeting, Schneider battled his weight throughout his life.

His mom called it baby fat, even when he was a teenager. In high school he was too heavy for sports but found his niche in theater. Offstage, he played the class clown. "It got to a point where I would make fun of my weight so I could deal with people," says Schneider, staff development instructor at Community Services for the Developmentally Disabled. "It's that shell that you build so people think that they can't get to you. I made fun of myself so others wouldn't."

When he started his undergraduate studies at Daemen College, Schneider didn't gain the freshman 15, but the freshman 50. The sophomore 70 followed.

"One day my mom looked at me and said, 'You need to lose weight because you're not walking right anymore,'" he recalls. "My thighs were so big that it looked wrong when I walked. My reply was, 'At least I'm still walking.'"

These days, Schneider does a lot more. To prepare for his first triathlon, he logs 10 miles of cardiovascular exercise a day. "I don't care if I'm the last person to complete it," he says. "I've met my goal and overcome everything if I finish."

Since his surgery, Schneider has religiously followed the high-protein, low-carbohydrate regimen that Caruana recommends. "I don't even crave greasy food because it makes me sick. I tried sugar one day and I had bad stomach cramps and sweating. I thought giving up bread was going to kill me," says Schneider, who routinely added a third slice to sandwiches. "I don't miss it."

Earlier this year, Schneider experienced reactive hypoglycemia, low blood sugar that usually occurs one to three hours after eating. The condition, which the Mayo Clinic describes as typical in people who have gastric bypass surgery, caused him extreme lightheadedness and numbness in his legs. Since modifying his intake of carbohydrates and protein, he has not experienced a reccurrence.

Asked whether he worries about more—and more serious—complications in the future, Schneider answers this way:

"They have been doing this procedure for more than 25 years now. In 25 years, I'll be 53. Between the depression I had because of the weight and the high blood pressure, I don't think I would have seen 40 without the surgery."

"THE SENTIMENT WAS THAT THE PATIENTS WEREN'T TRYING HARD ENOUGH. BUT WE SLOWLY BEGAN TO GET PHYSICIANS ON BOARD AS THEY SAW THE OUTCOME. NOW I HAVE PHYSICIANS TELLING ME THAT IT'S FORTUNATE THAT THERE IS THIS OPTION."

—JOSEPH A. CARUANA, MD

RIGOROUS ELIGIBILITY

In the eight months after his open gastric bypass surgery, Schneider lost nearly 100 pounds, a number that suggests such procedures are a quick fix for the morbidly obese.

Bariatric surgeons warn that they're anything but.

"Anybody who expects that weight-loss surgery is the be-all and end-all—that the weight's going to come off and it's going to be easy—is going to fail," says Alan Posner, MD, assistant professor of surgery and medical director of Kaleida's Comprehensive Weight Loss & Bariatric Surgery Program.

"It's not a perfect solution. Weight-loss surgery is a tool. It makes it harder to eat a lot, and it makes you lose weight to begin with. But it doesn't keep the weight off—a low-glycemic index diet and exercise does."

To ensure optimal weight loss after bariatric surgery, patients at Buffalo General and Sisters hospitals—both designated Centers of Excellence by the ASMBS—undergo a rigorous prescreening protocol, much of it required for insurance coverage. Extensive tests are conducted, including tests to rule out medical causes of obesity, such as thyroid disease. Patients must consult with a dietician, who puts them on a specialized diet in the weeks before surgery and advises them to continue eating sensibly for the rest of their lives.

In the long run, if patients don't maintain a healthy lifestyle they won't sustain a desirable weight, surgeons say. In fact, it's estimated that between 10–20 percent of patients regain a significant amount, or all, of the weight they lost postoperative.

"Over time, the body becomes better at absorbing nutrients," explains Posner, a fellowship-trained laparoscopic surgeon. "It doesn't reverse the effects of the bypass completely, but people get to the point where they can cheat. And with time, people become complacent. So, our goal is to get them to change. We want people to change their eating habits before surgery because, if they don't learn how to do it then, what makes us think they're going to learn to do it afterward?"

PSYCHOSOCIAL COMPONENT

Since poor postoperative outcomes can be linked to preoperative psychosocial status, another important component of screening candidates for bariatric surgery is a psychological evaluation.

"Once you get morbidly obese, there's got to be a psychological component involved," Posner says. "It could be depression, it could be binge eating, it could be some eating disorder or just a need that an individual never really fulfilled. So we're screening for eating disorders that may impact the surgery and to make sure that patients with psychological disease are stable."

The psychologist is also determining whether patients have reasonable expectations after surgery, Posner adds. "In other words: Do they understand that this is going to be a lot of work?"

"UNTIL GASTRIC BYPASS BECAME POPULAR, CONDITIONS LIKE BERIBERI AND PELLAGRA AND KWASHIORKOR WERE UNHEARD OF OUTSIDE THIRD WORLD COUNTRIES. OUTSIDE ETHIOPIA AND SUDAN, YOU WOULDN'T SEE THESE THINGS. NOW THEY'RE ENDEMIC."

—PAUL ERNSBERGER, PHD

Because so many morbidly obese patients are habitual eaters, those who rein in their overeating after surgery are still at risk of taking up other unhealthy habits. Psychologists refer to this as "addiction transfer"—for example, compulsive shopping to fill the void left once the binge eating ceases.

"Studies have shown that those dopamine centers in the brain that light up when obese people eat are the same centers that light up with gamblers, sex addicts and drug addicts," says Hoffman. "When that food reward is taken away, some patients replace the habit with gambling, promiscuous sex or drugs. We've seen it. There are all kinds of problems, so we have to be very careful that patients don't trade one bad habit for another."

After she had laparoscopic banding in 2004, the only habit Jennifer Chase picked up was exercising on her Bowflex. She also plays percussion and sings in a rock band, something she'd never had the courage to do at 280 pounds.

"Being overweight plays such havoc on your self-esteem," says Chase, 43, a certified medical assistant at Buffalo General Hospital and one of Posner's patients. "You start to doubt yourself about everything you do. It's like you're under a magnifying glass all the time. You think people are watching what you put in your mouth. It's an awful feeling being fat."

CHASE wasn't always that way. An athletic child and teen, she began struggling with extra weight in her 20s, after the birth of her son. When he was eight months old, she was hit by a drunk driver and had to undergo back surgery, requiring a lengthy sedentary recovery. Then, in 1998, she was diagnosed with multiple sclerosis.

To comfort herself through trying periods, she ate. And to lose weight, she dieted. "Jenny Craig … Weight Watchers … the popcorn diet … the Mayo Clinic diet … the vanilla ice cream diet … the Atkins diet … the cabbage soup diet," she says, trying to remember them all.

Since the surgery, Chase has renounced dieting in favor of eating small portions of nutrient-rich food while allowing herself the occasional treat.

Shedding pounds has been relatively easy, she says, now that she reaches satiety sooner. The bigger challenge has been coming to terms with her slimmer physique. For several years after the surgery, Chase worked with a counselor to develop a healthy body image.

"Here I was losing weight, and I still couldn't see the skinny girl in the mirror," she explains. "I was upset that I wasn't seeing what I thought I should see, when the whole while it was always there."

For patients who struggle emotionally with weight gain—and weight loss—Chase would like to see a stronger emphasis on the psychology of obesity incorporated into the pre- and post-op phases of bariatric surgery.

"When you're the fat girl for so long," she says, "the stigma stays with you."

RESEARCH YIELDS CLUES

As the nation's BMI has escalated, researchers have stepped up their efforts to understand the complex interplay of factors—genetic, behavioral, socioeconomic and environmental—that contribute to obesity, with the goal of developing better strategies for prevention and treatment.

According to bariatric surgeons, weight-loss operations have yielded important clues in the investigation.

"By studying patients who have this procedure we're learning so much more about obesity," says Caruana. "Just in the past few years there has been some very exciting work looking at the effect of removing the food stream from the duodenum. There seems to be a direct effect of bypassing this area and the correction of type 2 diabetes.

"It's said that five different and separate interventions are accomplished during gastric bypass," he adds. "Doing this procedure causes very significant, sustained weight loss in probably 90 percent of patients who have it. To say that it happens only because the stomach is smaller and people can't eat as much is much more simplistic than it really is."

In the October 2009 issue of the journal *Surgery,* Caruana co-wrote an article describing the protocol he established to reduce the incidence of pulmonary embolism after gastric bypass, the leading cause of postoperative death in patients. Recently, he has been collaborating with Scott Monte, PhD, clinical assistant professor of pharmacy, on the preliminary phase of research examining levels of both blood endotoxin and colonic flora in patients before and after bypass surgery.

Jennifer Chase, pictured above with her father prior to having bariatric surgery. An athletic child and teen, Chase began struggling with her weight in her 20s. Today she has returned to activities she loves, such as riding her all-terrain vehicle.

"There's data that has shown that the bacteria in the colon may be different in people who are obese compared to normal-weight people," Caruana says. "These bacteria may be taking more energy and more calories out of everything that's consumed in someone who's obese. In other words, two different people can have the same meal and, in one patient, much more stays in storage compared with the other patient."

At Buffalo General Hospital, Posner is in the initial phase of a pharmacokinetic study looking at appropriate levels of blood thinner for perioperative patients. Around the country, he says, much of the research thrust is on developing pharmacotherapeutic alternatives to bariatric surgery—specifically, more effective anti-obesity medication than what is currently on the market.

> **"THERE ARE SO MANY BIOCHEMICAL CHANGES THAT OCCUR IN THE BODY DURING GASTRIC BYPASS THAT WE DON'T KNOW ABOUT. WHAT MOST OF THE MEDICAL RESEARCHERS ARE TRYING TO DO IS LOOK AT HOW GASTRIC BYPASS AFFECTS THE BODY AND DETERMINE HOW WE CAN CHEMICALLY INDUCE A LOT OF THOSE EFFECTS SO WE DON'T HAVE TO OPERATE."**
>
> —ALAN POSNER, MD

Alan Posner, MD, LEFT, and Aaron Hoffman, MD '98

Recalling Fen-phen, the ill-fated diet drug of the 1990s that caused heart valve lesions, Posner says researchers are attempting to replicate the way that the medication activates serotonin receptors in the brain without targeting serotonin receptors in the heart.

"There are so many biochemical changes that occur in the body during gastric bypass that we don't know about. What most of the medical researchers are trying to do is look at how gastric bypass affects the body and determine how we can chemically induce a lot of those effects so we don't have to operate."

Until that day, Posner says, bariatric surgery—when performed by well-trained physicians on carefully prescreened patients—remains the best treatment for morbid obesity.

"Weight-loss surgery should be done for someone who has no other choice. That's what we tell everybody: 'If there's any other way you can keep enough weight off to be healthier, don't have weight-loss surgery.'" BP