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# Bariatric surgery: Part of the answer to the obesity epidemic

**I**N THIS ISSUE, Dr. Stacy Brethauer and his colleagues present an excellent review of the risks and benefits of bariatric surgery.<sup>1</sup>

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Their article is timely, for we are currently observing an epidemic of obesity, not only in this country but also throughout the world: more than 1 billion adults worldwide are estimated to be overweight and at least 300 million are obese.

And the rates are increasing. The National Health and Nutrition Examination Surveys in the United States show a dramatic trend.<sup>2,3</sup> The percentage of adults who are overweight (defined as a body mass index [BMI] of 25 to 29.9 kg/m<sup>2</sup>) has increased slightly, from approximately 30.5% in 1960 to 34.0% in 2000, but the prevalence of obesity (defined as a BMI  $\geq$  30 kg/m<sup>2</sup>) has more than doubled, from approximately 13% in 1960 to over 30% in 2000. Currently, 64% of the US adult population is either overweight or obese.

Even more worrisome is the prevalence of extreme obesity (defined as a BMI  $\geq$  40 kg/m<sup>2</sup>), which has increased nearly sixfold in these 40 years, from 0.8% to 4.7%. In African-American women, between the years 1995 and 2002 alone, the prevalence of extreme obesity increased 15 times—from 0.5% to 7.5%.<sup>4</sup>

Moreover, obesity causes a host of complications that seem to affect every major organ system, including the cardiovascular system.

Therefore, the obesity epidemic has tremendous economic, medical, and psychosocial consequences.

## ■ MORE THAN CALORIES

Recent research has shown that obesity is not a simple process that develops only when a person consumes more calories than he or she burns. The pathophysiologic mechanisms that contribute to its development are complex and highly integrated and involve alterations in underlying physiologic systems and molecular pathways.

Although our environment has changed in many ways that promote obesity, many people manage to resist putting on weight. There is evidence that the variable susceptibility to obesity in response to environmental factors is modulated by specific genes.<sup>5</sup>

## ■ CURRENT MEDICAL TREATMENTS FALL SHORT

Treatment of obesity typically begins with lifestyle intervention and proceeds to pharmacologic treatment.

Unfortunately, current treatment programs for obesity have been less than spectacular in their results. In general, people who undergo lifestyle interventions—diet and exercise—lose only about 10% of their body weight.<sup>6</sup> Pharmacologic treatment provides a similar reduction.<sup>7</sup> Long-term success (ie, maintenance of weight-loss) with medical weight-loss programs has been disappointing.

**Obesity  
is complex,  
and so is  
its treatment**



In particular, people with extreme obesity cannot, with rare exceptions, lose and keep off enough pounds to achieve a healthy body weight with medical interventions alone. Therefore, those who have this degree of obesity are turning in greater numbers to obesity surgery.

### ■ BALANCING THE RISKS AND BENEFITS OF SURGERY

As outlined by Dr. Brethauer and colleagues, surgical procedures have evolved tremendously since the first attempts were made to treat obesity. Today, several procedures are available.

However, patients contemplating bariatric surgery should not think that surgery alone is the answer. As Dr. Brethauer and colleagues emphasize, surgery is not a “quick fix.” Instead, it should be part of a long-term process to manage the condition.

Before deciding on bariatric surgery, patients need to be well educated on the risks and benefits of the procedure so that they can make an informed decision. They need to know that they need to keep up their lifestyle changes to obtain the most successful outcome from the procedure. They also need to understand that the procedure is being recommended not solely for the goal of weight loss but possibly as a treatment for other coexisting conditions related to obesity, such as hypertension and hyperglycemia.

In regard to correcting comorbidities, as discussed by Dr. Brethauer and colleagues, bariatric surgery has produced some truly remarkable results. Rates of hypercholesterolemia, gastrointestinal reflux, sleep apnea, diabetes, and hypertension are markedly reduced after surgery. Patients with diabetes or

hypertension have lower blood glucose levels and lower blood pressure afterward and therefore require less medication. However, as with any surgical intervention, complications can and do occur.

Encinosa and colleagues<sup>8</sup> recently presented data that suggest that the rate of complications following bariatric surgery is higher than commonly supposed. Examining insurance claims, they found that the 6-month postoperative complication rate was 39.6%. In contrast, the in-hospital complication rate in most studies is about 20%. Overall, 18% of the patients in their study had a complication that necessitated an outpatient visit, emergency room visit, or hospital admission, which added to the cost of the surgery. The investigators concluded that to reduce the costs and improve outcomes of bariatric surgery, we need to do a much better job in preventing postoperative complications.

### ■ IT TAKES A TEAM TO TREAT OBESITY

As discussed by Dr. Brethauer and colleagues, the treatment of obesity, like the disease itself, is a complex process. Whether the treatment is surgical or medical, it is optimally handled by a team. The process requires considerable education and interaction with a team of professionals, such as dietitians, diabetes educators, and psychologists, in addition to the surgeon. This interactive approach gives the best hope for optimal success.

Thus, bariatric surgery should not be viewed as the answer to the obesity problem but should be considered as an integral part of a comprehensive weight-management program for patients whose condition requires such a procedure.



### ■ REFERENCES

1. Brethauer SA, Chand B, Schauer PR. Risks and benefits of bariatric surgery: current evidence. *Cleve Clin J Med* 2006; 73:993–1007.
2. Flegal KM, Carroll MD, Kuczmarski RJ, Johnson CL. Overweight and obesity in the United States: Prevalence and trends, 1960–1994. *Int J Obes Relat Metab Disord* 1998; 22:39–47.
3. Hedley AA, Ogden CL, Johnson CL, Carroll MD, Curtin LR, Flegal KM. Prevalence of overweight and obesity among US children, adolescents, and adults, 1999–2002. *JAMA* 2004; 291:2847–2850.
4. Roberts A, King J, Greenway F. Class III obesity continues to rise in African-American women. *Obes Surg* 2004; 14:533–535.
5. Bouchard C. Genetics and the metabolic syndrome. *Int J Obes Relat Metab Disord* 1995; 12(suppl 1):S52–S59.
6. Wadden TA, Butryn ML, Byrne KJ. Efficacy of lifestyle modification for long-term weight control. *Obes Res* 2004; 12(suppl)151S–162S.
7. Glazer G. Long-term pharmacotherapy of obesity 2000: a review of efficacy and safety. *Arch Intern Med* 2001; 161:1814–1824.
8. Encinosa WE, Bernard DM, Chen C-C, Steiner CA. Healthcare utilization and outcomes after bariatric surgery. *Med Care* 2006; 44:706–712.

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**Surgery  
is part of  
a long-term  
process  
to manage  
obesity**