

# Small Changes Can Add Up for Obese Teens

BY DAMIAN McNAMARA

SAN ANTONIO — Recommend only one or two changes at a time in diet and physical activity to help severely obese adolescents improve their health and quality of life, Dr. Mary L. Brandt advised.

Incremental increases in physical activity and small but consistent changes in diet, including smarter fast-food choices, are good starting points, she said at the annual meeting of the North American Society for Pediatric and Adolescent Gynecology.

In assessing the teen's degree of obesity, BMI is important. "I strongly feel all physicians should know the BMI of every patient in their practice. BMI is a way to understand the degree of obesity. The concept is that 200 pounds is okay if you are 6 feet 6 inches, but not if you are 5-foot tall," Dr. Brandt said.

The adverse health effects of obesity can be considerable. For example, approximately 50% of overweight adolescents have at least one risk factor for cardiovascular disease, and about 20% have two risk factors (*Circulation* 2009;119:628-47; *Am. Fam. Physician* 2008;78:

1052-8). These patients are at higher risk for insulin resistance, hyperlipidemia, hypertension, and sleep apnea, said Dr. Brandt, professor of surgery at Baylor College of Medicine in Houston.

The unfavorable health effects of obesity can also shorten life expectancy (*JAMA* 2003;289:187-93). If an individual is morbidly obese (a BMI of 45 kg/m<sup>2</sup> or more) at age 20, the researchers wrote, a black man would lose 22 years; a white



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DR. BRANDT

man, 12 years; a white woman, 8 years; and a black woman, 4 years.

Obese adolescent patients are heartened to learn that their ancestors are partly to blame. It helps alleviate some of their guilt and shame. "I tell all my obese patients that what they are doing

is what human beings are supposed to do. We are genetically programmed to store fat," she said. About 40%-70% of BMI can be attributed to genetics.

Sex differences also play a role in obesity. The health risk at any level of obesity is higher for boys than for girls. "This has to do with where the fat is, not how much [there is]," Dr. Brandt said. The sex difference in fat distribution starts before puberty.

Another way to deal with obese adolescent patients is to address the 30%-60% of BMI that is caused by factors other than genetics, she said.

Start with the "low-hanging fruit" when counseling teen patients and families about diet and physical activity. For example, begin with what the patient drinks every day. "If you tell a kid they cannot have something, it will not work. If they drink four Cokes a day, see if they will commit to drinking only two or three instead," she said.

Ask about the patient's diet in a non-judgmental way, she recommended. Talk to a child or adolescent who eats a lot of fast food about smart choices. For example, the difference between a Double

Whopper with cheese (1,010 calories) and a hamburger (290 calories) at Burger King is 720 calories, according to the company's Web site.

Also, "the traffic light diet" works well with kids. Tell them there are "foods that are good [green light], things you need to watch [yellow light], and things you should never have [red light]. I have them pick one change for each of the three categories that they will commit to," Dr. Brandt said. This diet plan is feasible and significantly decreased BMI in pediatric patients compared with treatment as usual in one study, she added (*J. Pediatr. Psychol.* 2007;32:106-10).

Decreased teenage physical activity also plays a major role in obesity, with the effect more pronounced in girls than boys, Dr. Brandt said. "We see more overweight girls than boys. What they are eating is about the same, but what they are burning is different."

"We have to figure out ways to encourage girls to play sports, including safe venues outside the home," said Dr. Brandt, who is also director of the Texas Children's Hospital adolescent bariatric surgery program in Houston. ■

## Severely Obese Adolescents Benefit From Bariatric Surgery

BY DAMIAN McNAMARA

SAN ANTONIO — Despite the controversy surrounding bariatric surgery for very obese adolescents, appropriate candidates often experience better psychosocial quality of life and improve or even reverse obesity-related comorbidities, according to preliminary results of a study at Texas Children's Hospital in Houston.

"This has been one of the most profoundly gratifying things in my career," said Dr. Mary L. Brandt, director of the hospital's adolescent bariatric surgery program. "They get their lives back."

Dr. Brandt reported results for 44 severely obese adolescents participating in an ongoing surgery study. Excess weight loss was 58% at 1 year and 60% at 2 years, she said at the annual meeting of the North American Society for Pediatric and Adolescent Gynecology.

The average age of the 32 girls and 12 boys is 16 years, and average body mass index is 60 kg/m<sup>2</sup>; the largest BMI was 92.

Surgery improved many of the preoperative comorbidities. For example, 70% of the 44 teenagers had preoperative insulin resistance, and 82% of these experienced resolution of the condition; 91% had sleep apnea, which resolved after surgery in 45%.

In preliminary results from the National Institutes of Health-funded Teen LABS study, Dr. Brandt and her associates found that type 2 diabetes resolved after surgery in 10 of 11 severely obese adolescents (*Pediatrics* 2009;123:214-22). Surgery was associated with a 34% decrease in BMI, a 41% decrease in fasting blood glucose levels, and an 81% decrease in fasting insulin concentrations.

In the Texas Children's Hospital series, 12 (27%) of the 44 patients experienced complications. Two patients experienced anastomotic bleeding, two had thiamine deficiency, and two had a marginal ulcer. Complications that occurred in one patient each included a retained nasogastric tube, coagulopathy, pulmonary embolism, anastomotic leak, urethral injury, and a Peterson hernia. All the complications resolved and there have been no deaths, said Dr. Brandt, professor and vice chair of surgery at Baylor College of Medicine in Houston.

"We are also participating in a second study called TeenView to look at the psychological component—eating disorders and depression especially," Dr. Brandt said. Changes in body shape satisfaction, social support, and peer victimization/teasing will be assessed.

Other researchers have demonstrated that greater depressive symptoms, decreasing competence and self-esteem, and greater poverty are associated with adolescent obesity (*Pediatrics* 2000;105:e15; *N. Engl. J. Med.* 1993;329:1036-7).

Dr. Brandt said quality of life for obese adolescents is similar to levels reported by people with cancer during chemotherapy (*JAMA* 2003;289:1813-9).

She emphasized that bariatric surgery should be considered only for morbidly obese adolescents who meet specific criteria (*Pediatrics* 2004;114:217-23). These procedures should be performed only in centers that can provide multidisciplinary evaluation and treatment, Dr. Brandt said. And because the long-term risks are not completely known, all adolescents who have bariatric surgery should be enrolled in a prospective outcomes study. ■

## High-Protein, Low-Carb Diet Effective in Teens

BY ROBERT FINN

SAN FRANCISCO — Obese adolescents lost significantly more weight on a high-protein, low-carbohydrate diet than on a standard low-fat diet, according to a randomized study involving 46 teens.

At the end of 12 weeks, the teens on the high-protein, low-carbohydrate (HPLC) diet lost an average of 9.0 kg, while those on the low-fat diet lost an average of 5.6 kg, a significant difference, Dr. Nancy F. Krebs of the University of Colorado, Denver, said at a meeting on clinical pediatrics sponsored by the University of California, San Francisco.

Moreover, adolescents in both groups tended to maintain their weight loss over an additional 24 weeks of follow-up. "My hypothesis was that [the HPLC diet] would get them to 12 weeks but they'd rebound," possibly even ending up heavier than before.

In fact, while adolescents in the HPLC group tended to gain back a little weight within the first 3 months after the end of the diet, they still weighed less than those in the low-fat group. And the HPLC group appeared to maintain that difference for another 3 months, although those differences did not reach statistical significance.

All the adolescents in the study were severely overweight, weighing at least 175% of their ideal body weight. The teens in the HPLC group were placed on a diet limiting them to 20 g/day of carbohydrates. To ensure that they were compliant with this diet, the investigators measured ketone lev-



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els twice daily. People on HPLC diets tend to become ketonic quickly, something that can be measured easily with a urine dipstick.

Both groups of adolescents lost equivalent amounts of fat and protein and showed similar improvements in their lipid profiles, but those on the HPLC diet lowered their triglyceride levels significantly more than the low-fat group.

Based on glucose tolerance test results, carbohydrate metabolism improved in both groups. The investigators observed no adverse effects of the HPLC diet.

Dr. Krebs said she has submitted her study for publication and has no relevant conflicts of interest. ■