

Boarding School for Obese Teens Shows Promise

Students in the Academy of the Sierras' first class lost an average of 85 pounds.

BY NANCY WALSH
New York Bureau

BOSTON — The first boarding school for obese adolescents is having unprecedented success in helping overweight teens lose significant quantities of weight, increase their level of fitness, and reap emotional rewards of improved self-esteem, academic performance, and mood.

The 15 members of the first class at the Academy of the Sierras (AOS) lost an average of 85 pounds during their two semesters at the Reedley, Calif., school and have maintained the weight loss for 10 months of follow-up, according to Daniel S. Kirschenbaum, Ph.D., clinical director of the academy.

The class comprised eight boys and seven girls who were about 15 years old. On admission, they averaged 100% overweight, with the least overweight student being 60% overweight. Their mean body mass index (BMI) was 43.1 kg/m² and mean weight was 124.7 kg (275 pounds).

At 10 months' follow-up, 60% were no more than 30% overweight, and 87% were below 60% overweight. The mean BMI had decreased to 30.6 kg/m².

In addition to weight loss, participants also exhibited significant improvements in fitness, emotional functioning, and academic performance, Dr. Kirschenbaum reported at the annual meeting of NAASO, the Obesity Society. Research findings have suggested that overweight teens are not only at risk

for multiple future health problems, but also experience numerous difficulties with self-esteem, depression, and isolation, he said. Failure in school and problem behaviors often result.

The AOS approach interrupts this cycle by means of a scientifically based immersion program that includes intensive cognitive-behavioral therapy, a very-low-fat diet, and an integrated academic program.

One basic premise that is stressed is that being overweight is a biologic challenge that must be faced in a proactive fashion. "We emphasize that their biology is dead set against long-term weight loss, but that biology isn't destiny," Dr. Kirschenbaum said in an interview. "We encourage them to think of themselves as athletes who are trying to transform their bodies, acknowledging the very real difficulty of the task."

These concepts are central to the cognitive behavioral component of the program, with the intention of helping obese adolescents face their commitment from a position of greater strength. "In the four cognitive-behavioral sessions students have each week, we really try to get them to understand that it's not just about losing weight, it's about reorienting their lives," he said.

The result in this group of students showed significant improvements in emotional states. On all three domains of the Child Depression Inventory—total or overall mood, emotional

problems, and functional problems—initial scores that approached clinically significant elevations were reduced to the normal range.

Another facet of the program is activity management. The students wear pedometers and are encouraged to take at least 10,000 steps per day, and even as many as 20,000, which approximates 10 miles of walking.

On one measure of fitness, the timed mile, the average time during the two semesters decreased from 18 minutes to 12.5 minutes. The cohort's initial average resting pulse rate, high at 85.3 beats/min, fell to a normal 69 beats/min, and upper body strength as measured by chest presses increased from 60.4 pounds to 76 pounds.

The accredited academic program not only includes a full load of core courses but also is integrated with the personal development side of the program. For example, in math classes, statistics are taught, so the students themselves can read and evaluate scientific studies on weight loss,

explained Dr. Kirschenbaum, who also is a professor of psychiatry and behavioral sciences at Northwestern University, Chicago.

A further crucial focus is the carefully designed, very-low-fat diet that is "teen friendly," including such items as low-fat pizza, vegetarian chili, and oatmeal cookies. The diet provides approximately 1,300 calories/day, with about 8 g fat and 50 g protein.

Certain foods, such as entrees and snacks, are controlled in quantity, but low-density foods such as salads and fruits can be eaten ad libitum at each meal. With these foods, the students must learn to exercise self-control, playing an active role in their weight management.

"We try to balance our external control with self-control, exerting enough external control to increase the probability of their being successful," Dr. Kirschenbaum said.

Preparing the students for transition back to their families and so-

cial circles—as well as to the larger obesogenic environment—is emphasized. For example, during their stay at AOS, the students are taken out to restaurants on occasion and are allowed to order whatever they wish. This increases their ability to deal with the stress of exposure to potentially problematic foods. When they make poor choices, the program gives the students time to analyze and try to understand their behavior.

Follow-up after the students leave the program includes extensive family involvement and an Internet-based aftercare program. Although longer-term follow-up clearly will be needed to fully evaluate the effects of the program, current support for it is justified by the magnitude and consistency of behavioral and activity changes seen in this first AOS class, Dr. Kirschenbaum said. ■



Academy of the Sierras students combine academics with a special diet and activity management. The student on the left (also shown in the photo on the right) lost a total of 73 pounds in 7 months.

Large Waist Circumference Tied to Kidney Disease in Type 1 Diabetes

Patients with type 1 diabetes and central obesity had a significantly increased risk of developing microalbuminuria in a study of 1,105 patients.

Investigators found that each 10-cm (4-inch) increase in waist circumference increased the risk of microalbuminuria by 34%. After almost 6 years of follow-up, the relationship remained significant after adjustment for other risk factors, including intensive insulin therapy, Dr. Ian H. de Boer and his colleagues at the University of Washington in Seattle reported.

The investigators evaluated microalbuminuria levels of 1,105 patients with type 1 diabetes who were a part of the Diabetes Control and Complications Trial (DCCT) and were followed in the Epidemiology of Diabetes Interventions and Complications (EDIC) study, and who had normal albu-

min secretion at baseline (J. Am. Soc. Nephrol. 2006 Dec. 6 [Epub doi:10.1681/ASN.2006040394]).

DCCT was designed to study intensive insulin therapy versus conventional insulin therapy in patients with type 1 diabetes. At the end of that trial, all participants were invited to join the observational EDIC study.

During a median of 5.8 years of follow-up, 93 patients (8.4%) developed microalbuminuria. The incidence of microalbuminuria increased with waist circumference, and was greater in men than in women (10.7% versus 5.8%) and in those who had been assigned in DCCT to conventional insulin therapy rather than intensive therapy (12.8% versus 4.5%).

—Maureen Donohue

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