

Weight



Management

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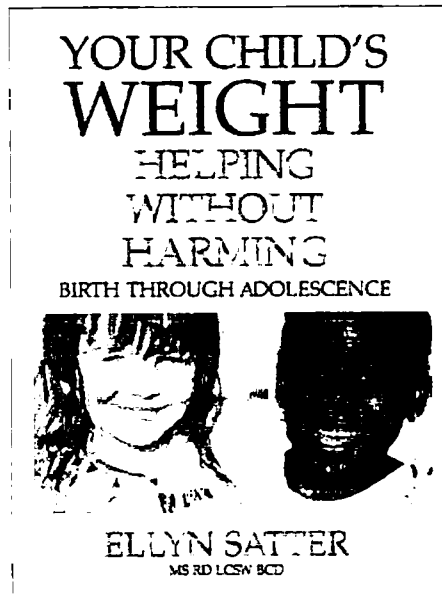
Newsletter

Interview with Ellyn Satter, MS, RD, LCSW, BCD, author of *Your Child's Weight: Helping Without Harming*

Molly Kellogg: What would you most like to communicate to registered dietitians (RDs) who work with overweight children?

Ellyn Satter: I need to address first that we're not talking about weight reduction here. RDs and, in fact everybody who works with overweight children, have this idea that the thing you do is restrict their food intake so that they will lose weight. And now that people are afraid of causing eating disorders, food restriction has taken the form of increasing low caloric-density foods and getting rid of high caloric-density foods. Food restriction has morphed into something that people can feel comfortable with even though it is still food restriction, and it feels like food restriction to the child. It's hard for nutrition professionals to accept this, but even these seemingly sensible indirect ways of restricting food intake are restrictions nonetheless.

Restriction exacerbates children's food preoccupation and the tendency to overeat and get too fat. The thing that I emphasize above all in *Your Child's Weight* is structure. Before you even look at food selection, you have to look at whether the family is having regular, reliable, sit-down meals and sit-down snacks between meal times. I believe in looking at structure first and staying absolutely away from anything that has to do with food selection



until the family gets structure in place. The structure is the bottom line.

MK: My guess is that you—as I do—feel pressure from the families to get the child to lose weight and to focus on particular foods.

ES: Exactly. It happens in larger systems, too, like in school cafeterias. Whenever people focus on food—whether it's eating or avoiding certain other foods—then somehow or other the more difficult task of taking responsibility for providing for children gets lost. Taking feeding children seriously means seeing to it that they are

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America's first boarding school for overweight teens: results of the first academic year

By Daniel S. Kirschenbaum, PhD

The first boarding school for overweight teens—the Academy of the Sierras (AOS)—has now completed its first academic year (September 2004–June 2005). This report presents the weight management results achieved by AOS students who enrolled for more than one semester (24 students attended for an average of 28 weeks: 13 females, 11 males; average age = 15.9 years).

The AOS intervention focus is based on the following equation:

$$\text{SELF CONTROL} + \text{EXTERNAL CONTROL} \\ = \text{WEIGHT CONTROL}$$

As noted previously (1), extremely consistent self-monitoring clearly promotes effective weight control in both adults and adolescents. Therefore, promoting consistent self-monitoring is the AOS cornerstone of the self-control variable of this equation. At AOS the students themselves determine how much they eat, their level of participation in activities, and even the consistency of their self-monitoring. However, the staff does everything possible to promote daily self-monitoring, including provision of pedometers and four cognitive-behavioral therapy sessions per week. These sessions address goal-setting, decisional counseling, rational emotive therapy, stress management, and other psychological aspects of weight control to help students stay focused and committed.

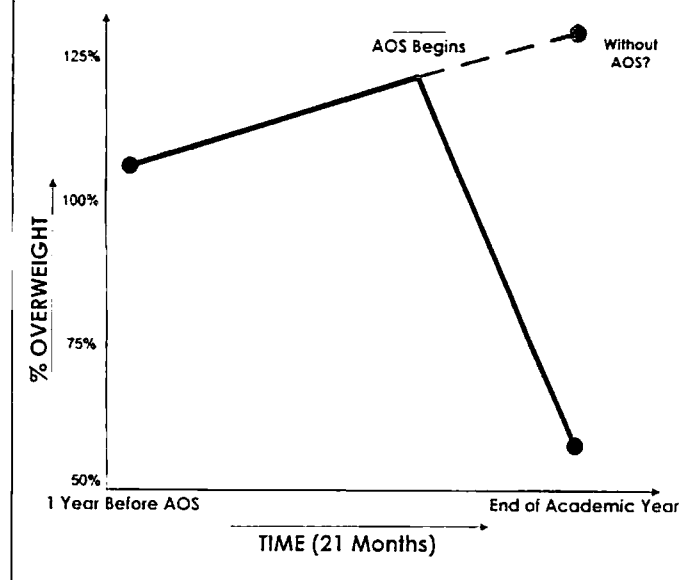
The external-control variable is manipulated primarily by providing a facilitating environment that includes many opportunities for physical activity, activity-based rewards, and minimization of sedentary behaviors (e.g., the only TVs available on the 68-acre AOS campus are located in the gym in front of exercise equipment). Additionally, teens at AOS have access to controlled foods (entrées, sides, snacks) designed to provide 1,200 kcal. per day as well as primarily low energy-dense foods in an uncontrolled fashion at every meal (e.g., fat-free soups, salads, fruit and low-fat protein sources such as tuna salad, egg salad, yogurt).

2004-2005 academic year outcomes

Weight loss

AOS students were traveling on an unfortunate pathway during the year prior to enrollment (Figure 1). Based on questionnaires completed by parents at the time of admission, the average student was morbidly obese (107% overweight; standard deviation (SD) = 53.1%) one year prior. Percent overweight was determined by comparing body mass indexes (BMI) to national norms (relative to the 50th percentile for

Figure 1. Changes in percent overweight: one year prior to admission to the end of the academic year (2004–2005) at AOS (n = 24)



age and gender, using BMI). During the year prior to enrolling at AOS compared to percent overweight at the time of admission, students had gained weight rapidly, as shown in Figure 1, to an average of 122% overweight (SD = 55.3%). If the students had continued on a linear trajectory from one year prior to admission through the assessment period at the end of the academic year, they would have become about 130% overweight, on average, at the end of the 2004–2005 academic year.

In sharp contrast, the students dramatically decreased their weights from the time of admission until the end of the academic year ($p < 0.001$) (Figure 1). Their average percentage overweight went from 122% at the beginning of the school year to 57.1% (SD = 33.2%), a 65% difference.

As shown in Table 1, actual weight lost averaged an unprecedented 85 pounds (-3.4 pounds per week) (SD = 49.3). Use of actual weights underestimates the degree of weight loss achieved by 22% (five of 24) of the students who grew by at least one inch. Twenty-five percent (six of 24) of the students reached approximately normal weight status (defined by BMI < 30, z-score < 2, and fitness within normal ranges). Two examples are as follows:

- 17-year-old boy, began AOS at 5 feet, 10 inches and 338 pounds; left AOS 5 feet, 11 inches and 191 pounds.

■ 15-year-old girl began AOS at 5 feet, 2 inches and 207 pounds; left AOS at 5 feet 2 inches, 158 pounds.

Fitness

Measures of fitness were completed on all students during the first week of the semester and included a timed mile, resting pulse, treadmill test (recovery pulse), and chest press (upper body strength). Every student improved in the timed mile, and on average students improved from 18-minute miles to 12.5-minute miles (Table 2). The students' baseline times showed evidence of deconditioning; but by the end of the academic year, most students (16 of 24) jogged at least part of the time during their final mile test. Initial resting pulses declined to the normal range by the end of the academic year. Recovery heart rates following a standardized treadmill test also improved dramatically, as did upper body strength.

Moods

A standardized measure of clinically significant emotional states, the Child Depression Inventory or CDI (2), afforded assessment of emotional changes from the beginning to the end of the academic year. The 13 parents who completed these questionnaires at the beginning of the school year and then again at discharge perceived significant improvements in two of the three of CDI scales: Total or Overall Mood ($p = 0.009$) and Emotional Problems ($p = 0.03$) but not Functional Problems ($p = 0.13$). On average, the perceived improvements in moods brought the students from the slightly elevated (near clinically significant) range to the normal range (close to the 50th percentile) (2).

2004-2005 Process Outcomes and Diet Evaluation

Examining the process of change shows that most students participated very actively in the key AOS process elements (i. e., intensive cognitive-behavior therapy, an integrated academic program, an extensive activi-

Table 1: Descriptive statistics for AOS 2004-2005 academic year; evaluation of 24 students

	1 year prior	Admission	End
M Weight (lbs.) (SD)	252 (80.81)	294.33 (91.56)	208.78 (56.69)
M BMI (SD)	39.89 (9.99)	44.79 (10.65)	33.81 (7.71)
M Z-Score (SD)	5.00 (2.67)	5.95 (2.55)	3.09 (1.92)

ties program, frequent personal training sessions, and use of a very low-fat diet) and tolerated the challenges quite well.

Self-monitoring

Students at AOS self-monitored at a consistent level (complete records on 86% of the days), about twice as consistently as typically seen in adolescents or adults in outpatient settings (3-4). Previous research has demonstrated that self-monitoring all foods eaten and activities performed at least 75% of the time predicts maintenance of long-term weight loss (5).

Journaling

Most students also journaled regularly in their self-monitoring booklets, averaging 126 words per week in their journals. The process of journaling regularly, an important coping tool (6), may prove to be useful if continued after students leave.

Activity levels

Students averaged 15,054 (SD = 3,886) steps per day as measured on their pedometers (i.e., about 7 miles of activity). Walking the equivalent of 10,000 steps per day (a level 33% below that of the average AOS student) has been associated with weight-loss maintenance in several studies (7-8).

Diet and hunger

The diet included controlled foods (entrées, sides, snacks) and *ad lib* uncontrolled low-density foods (salads, fruit, soups). The controlled foods were designed to be appealing, totaling 1,200

kcal., with 300 additional calories expected from the uncontrolled foods (expected totals: 1,500 kcal., < 15 g. fat, 70 g. protein, and > 30 g. fiber).

All students completed written assessments of the nutritional aspects of their diets based on posted nutritional information and the reference book, *Doctors Calorie, Fat, and Carbohydrate Counter* (9). Complete records over two days from 18 students were obtained mid-way through the second semester. Eight students volunteered to be monitored by staff members who assessed total consumption and analyzed it with standard nutritional software (10).

Calories and fat assessed via self-report and external-report were lower than expected but almost identical (self = 1,262 kcal. per day, 7.7 g. fat vs. external = 1,260 kcal. per day, 7.2 g. fat). Protein consumption was in accord with design, but significantly underestimated (self = 49.7 g. vs. external = 73.6 g., $p < 0.05$); fiber was lower than designed, but accurately self-monitored (self = 19.6 g. vs. external = 18.3 g.).

Nineteen of the original 24 students completed ratings of hunger on a 10-point scale at four time periods for two days in late April 2005. Five of the students had already left AOS at the time of this assessment. The scale was anchored at five points, including:

- “6. Hungry—I am hungry but I can continue what I am doing.
- 4. Mildly Hungry—I can ignore my hunger most of the time.

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2. Slightly Hungry—I notice my hunger only when I focus my attention on it.”

In accord with the extant literature (11–12), this reduced calorie, very low-fat, and low-energy density diet was well tolerated at AOS, with hunger ratings averaging near the “Slightly Hungry” level (2.51, SD = 2.05).

Conclusions

These changes in weight, fitness, moods and process are statistically and clinically significant. The degree of weight change observed at AOS has not been reported in treatment programs for obese children and adolescents (13). The process measures also showed that the students tolerated the diet well and participated very effectively in the therapeutic and activities aspects of the program.

The consistency of the students’ self-monitoring and activity levels (both major predictors of long-term success) bodes well for long-term change (5–6). Additional follow-up is needed to know the full measure of the program’s impact. Extensive contact with parents (weekly phone calls, three-day family workshops) and the Internet-based after-care program focused on self-monitoring and goal-setting should help extend the efficacy of the approach (14). A 10-year follow-up is scheduled.

Daniel S. Kirschenbaum is the clinical director of Healthy Living Academies (healthylivingacademies.com) and professor of psychiatry and behavioral sciences at Northwestern University Medical School in Chicago, Ill. His latest book, Healthy Obsession Program: Smart Weight Loss Instead of Low

Table 2. Changes in fitness measures: AOS’s first academic year (2004–2005)

Measure	N	Initial		End		T-test	Significance
		M	SD	M	SD		
Chest press (pounds)	22	60.4	23.6	76.0	17.0	4.9	< 0.001
Timed mile (minutes)	23	18.0	4.9	12.5	3.3	8.4	< 0.001
Resting pulse (BPM)	24	85.3	16.8	69.0	6.8	6.3	< 0.001
Recovery pulse (BPM)	21	110.3	23.0	79.0	13.9	8.6	< 0.001

Carb Lunacy (benbellabooks.com), will be released in January 2006.

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