

## Parents of Overweight Children Blind to Problem

BY DIANA MAHONEY  
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BOSTON — Many parents of children who are overweight or those at risk for becoming overweight don't perceive their children's weight accurately, Patricia A. Cluss, Ph.D., and colleagues said in a poster presentation at the annual meeting of the Society of Behavioral Medicine.

These findings "have significant implications for public health and clinical interventions aimed at decreasing the pediatric obesity epidemic," wrote Dr. Cluss and her associates.

Parental awareness of and concern that their child's weight is above the normal range is "intrinsic to the success" of physicians' efforts to identify and target children for prevention or intervention, she said in an oral presentation.

To determine the accuracy of parental weight perceptions, the parents of 616 children aged 3-12 years seen at two community pediatric practices completed eight-item, self-administered questionnaires. Medical assistants weighed, measured, and calculated the children's body mass index (BMI).

The study included 281 girls and 335 boys. Of the girls, 15% were at risk for being overweight, with BMIs in the 85th to 94th percentiles, and 25% were overweight, with BMIs above the 94th percentile. Using the same criteria, 15% of the boys were at risk for being overweight, and 22% were overweight.

Only 49% of parents surveyed accurately recognized their overweight children as being overweight, reported Dr. Cluss of the University of Pittsburgh.

"The parents of overweight girls were more likely to accurately perceive their child as being overweight, compared [with] the parents of boys, particularly preadolescents," said Dr. Cluss. While 63% of overweight girls' parents recognized their children's weight status, only 29% of overweight boys' parents had accurate perceptions.

The results also showed that parental perceptions were more often correct for children aged 6-12 years than for children younger than 6 years old.

Only 8% of the parents whose children were at risk for becoming overweight were aware of it.

The findings add to a growing body of data indicating that many parents do not correctly perceive their child's weight status—a fact that may hinder parents' readiness to engage with the pediatrician in tracking and intervention strategies, said Dr. Cluss.

As such, physicians "have an important role to play in identifying at-risk children and communicating early concern to parents," she said.

In addition, special attention should be given to communicating with parents of younger children who may be overweight or at risk of becoming so and with parents of overweight boys, considering both groups had low accuracy rates, Dr. Cluss said. ■

## Fitness Classes Beat Team Sports For Helping Children Lose Weight

BY CHRISTINE KILGORE  
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WASHINGTON — Specially designed physical education classes that increase levels of physical activity were better for overweight children than typical classes focusing on team-oriented sports and games, according to findings from a school-based study.

During the course of a school year, the children in the fitness-focused classes lost more body fat and had greater improvements in fasting insulin levels and cardiovascular fitness, Aaron L. Carrel, M.D., said at the annual meeting of the Pediatric Academic Societies.

"We need to partner with the schools" to improve the health of overweight children, said Dr. Carrel of the department of pediatrics at the University of Wisconsin, Madison.

Dr. Carrel and his associates worked with a school district outside of Madison to randomize 50 overweight, middle-school children to either standard physical education classes, which emphasize team sports and games, or to fitness-oriented gym classes. All classes were held three times a week for 42 minutes.

The fitness-oriented classes were smaller in size—approximately 15 students, compared with 30-35—and focused on the use of equipment, such as treadmills, and oth-

er fitness-oriented activities. "In the [standard] class, there was more standing around and choosing teams," Dr. Carrel noted at the meeting, sponsored by the American Pediatric Society, the Society for Pediatric Research, the Ambulatory Pediatric Association, and the American Academy of Pediatrics.

All students had a body mass index above the 95th percentile for age. At the beginning and end of the school year, they underwent fasting evaluation of insulin and glucose and measurement of body composition by dual x-ray absorptiometry (DXA).

They also participated in maximal oxygen consumption (VO<sub>2</sub> max) treadmill testing that was progressive and staged. Every minute the treadmill got steeper "until the children couldn't exercise any longer," he said.

At baseline, there were no significant differences between the two groups in any of these measures. But after the 9-month school year was up, the children in the specially designed classes had a greater loss of body fat (4% vs. 2%), a greater increase in cardiovascular fitness (an increase in VO<sub>2</sub> max of nearly 3 mL/kg per minute vs. less than 1 mL/kg per minute), and greater improvement in fasting insulin (-5 μIU/mL vs. +3 μIU/mL).

Other research conducted has shown that fitness has a greater correlation with insulin than body fat, Dr. Carrel noted. ■

**In the standard PE class, 'there was more standing around and choosing teams,' compared with the fitness-oriented PE class, which focused on using equipment.**

## Exercise Improves Cognition in Obese Children

BY DIANA MAHONEY  
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BOSTON — A prescription for exercise may do more than boost obese children's physical health. It also may improve how they think, results of a study have shown.

The findings are consistent with recent work demonstrating exercise-induced improvements in cognition in older adults and add fuel to the argument for increasing physical education requirements in schools and community-based opportunities for physical activity, according to Mathew Gregoski of the Georgia Prevention Institute of the Medical College of Georgia in Augusta.

As part of an ongoing investigation of a possible dose-response relationship between a 3-month exercise program and adiposity, insulin sensitivity, and executive functioning in overweight youth, 30 children aged 8-11 years with a body mass index at or above the 85th percentile for their age and gender were randomized to one of three intervention conditions—no exercise, low-dose exercise (20

min/day), and high-dose exercise (40 min/day)—to test the effect of aerobic exercise training on cognitive measures. Both of the exercise conditions included vigorous aerobic activities and games that maintained average heart rate above 150 beats per minute, Mr. Gregoski reported at the annual meeting of the Society for Behavioral Medicine.

Before and after the interventions, all participants underwent standardized mental functioning testing using the Cognitive Assessment System (CAS). The investigators calculated the changes from baseline in four scales of the CAS, including planning, attention, successive, and simultaneous, said Mr. Gregoski, who conducted the investigation under the direction of Catherine Davis, Ph.D.

The planning scale measures an individual's ability to generate and implement hypotheses and to use decision-making structures to evaluate them. This aspect of mental functioning is thought to underlie cognitive control, intentionality, and self-regulation—all of which have been identified as challenges for obese children.

The attention scale measures an individual's ability to focus attention, take in information, and maintain sufficient alertness to attempt problem solving. The successive scale is associated with the ability to integrate information in serial order, and the simultaneous scale is associated with mental operations that require consideration of all elements of a complex stimulus concurrently.

Analysis of variance revealed significant improvement following both exercise interventions in the planning scale of the CAS, with the high-dose exercise group experiencing the most change from baseline. The other cognitive measures did not show an effect, he said.

That a significant cognitive benefit was observed with the 20-minute intervention in addition to the longer duration is notable in that such a program could readily be introduced during regular physical education sessions.

These results "provide evidence for a direct relationship between physical activity and children's cognitive development," Mr. Gregoski said. ■

## Moderate Exercise May Be Best for Overweight Boys

Walking at the moderate pace of 4 km/h appears as beneficial to fat oxidation as more strenuous exercise in prepubertal boys, according to Claudio Maffei, M.D., of the Department of Pediatrics at University Hospital, Verona, Italy.

Twenty-four boys, aged 9-11 years, with an average body mass index of 25.5 were given a treadmill test, their respiratory exchange measured by indirect calorimetry while they walked at 4, 5, and 6 km/h. The investigators also measured the boys' maximal oxygen uptake. All the boys reported a sedentary lifestyle, spending 2 hours per week in recreational organized physical activity after school.

Energy expenditure and carbohydrate oxidation increased progressively as the treadmill speed was increased. However, the fat oxidation rate did not change significantly when walking speed in-

creased (J. Clin. Endocrinol. Metab. 2005;90:231-6).

After adjusting for fat-free mass, a partial regression analysis demonstrated that energy expenditure during walking correlated with adiposity in boys, the researchers said. In another partial regression analysis, they found a significant association between adiposity and the fat-to-carbohydrate oxidation rate during walking at all three speeds.

"Therefore, at similar exercise intensities, the greater the adiposity of the body, the higher the energy expenditure and the proportion of carbohydrate in the fuel mix that oxidized during walking," the researchers said.

Low-intensity exercise may be more acceptable to overweight children and may not lead to the higher carbohydrate oxidation tied to later sedentary behavior and increased appetite, they added.

—Kevin Foley