

# Research

*Childhood obesity is a serious health problem—and one schools can help address*

## Beyond Baby Fat

By Susan Black

The medical community is calling childhood obesity the nation's "largest emerging issue" and a "national epidemic" that demands urgent attention. And policy makers at the state and federal level are responding.

Recently, for instance, a public health initiative sponsored by the federal Department of Health and Human Services allocated millions of dollars to community-based programs to combat diabetes, asthma, and obesity. Announcing the awards, HHS Secretary Tommy Thompson said government needs "to reach Americans in the places they live, work, and go to school."

Earlier this year, New York Gov. George Pataki signed a bill into law establishing a childhood obesity prevention program within the state's Department of Health. Pataki says the program will reduce obesity among children and adolescents and counteract the spread of diabetes and other serious medical problems associated with childhood obesity.

The New York statute is timely—and on target. A survey of some 3,000 children enrolled in New York City's public kindergarten through fifth grades found that near-

ly half are overweight and about one-quarter are obese, the highest rates in the nation. According to Health Commissioner Thomas Frieden, the study—conducted in 2000 by the city's Department of Health and Mental Hygiene and the Department of Education—discovered "a calamity in the making." Today's obese children, Frieden says, will create a "future wave" of serious ailments and disabilities.

### **Bigger and bigger**

That wave has already crested. According to the American Obesity Association (AOA), trend lines from the past three decades show steady increases in obesity cases in children (ages 6 to 11) and adolescents (ages 12 to 17), with an alarming spurt of new cases in recent years.

Numbers vary slightly according to who's monitoring the phenomenon, but between 1976 and 1980, AOA calculated that 7 percent of all U.S. children and 5 percent of all adolescents were obese. Between 1988 and 1994, the rates rose to 11 percent for both children and adolescents. And by 2000 the numbers surged to an alarming 15.3 percent for children and 15.5 percent for adolescents.

The incidence of obesity isn't equal across gender and race. Based on a nationally representative sample of students in grades 9-12, a 1999 survey conducted by the Centers for Disease Control and Prevention reports that:

- More boys (17 percent) were overweight than girls (14 percent).
- More black students (22 percent) were overweight than white students (14 percent).
- More black girls (23 percent) and Hispanic girls (18 percent) were overweight than white girls (12 percent).



## Research

Children's extra pounds are often dismissed as "baby fat," but Dennis Styne, a pediatric endocrinologist at the University of California-Davis' Children's Hospital, warns that children's excess weight doesn't always "magically disappear" after babyhood. If overweight children remain overweight as teenagers, he said in a recent interview, they're likely to face obesity and severe medical complications as adults.

### The personal toll

Meanwhile, many overweight kids are bringing social and emotional problems—as well as potential health problems—to school with them.

"On the first day of school, two of my extremely overweight boys couldn't squeeze into their desks," a fourth-grade teacher in Vermont told me. She arranged to have larger desks brought from a middle school, but the damage had been done. "The embarrassment for these children has endured," she says, noting that, despite her best efforts to prevent crude remarks, some students persistently call the boys "chubby" or "fatboy."

A middle school nurse in North Carolina says she noticed a startling increase in the number of overweight and obese students among incoming sixth-graders. With help from the school's counselor, she organized a voluntary support group for students with serious weight problems. "Imagine being 60 to 70 pounds overweight at age 12, an age when kids are super-sensitive about their image and desperately need to fit in with their peers," she says.

These firsthand accounts are supported by a study by Richard Strauss of the Robert Wood Johnson School of Medicine. By the time obese children are 13 or 14 years of age, Strauss reported in *Pediatrics*, their self-esteem is significantly lower than that of normal-weight children. According to Strauss, kids' low self-esteem often shows up as constant sadness, loneliness, and nervousness and in destructive behaviors such as smoking and using alcohol.

A study by researchers at Duke University's medical school also shows a link between chronic childhood obesity and

psychiatric disorders, according to a report in the April 25, 2003, issue of *The Brown University Child and Adolescent Behavior Letter*. Following an eight-year review of nearly 1,000 children, Sarah Mustillo, the study's lead author, reported that the obese teens in the study were 2.5 times more likely than the non-obese teens to meet diagnostic criteria for oppositional defiant disorder, depression, anxiety, attention-deficit/hyperactivity disorder, and various phobias.

In addition, says Priscilla Spencer of the National Association of School Psychologists (NASP), obese children often face rejection and discrimination from other children and from adults, including teachers. They tend to experience more failure, she says, and tend to have poor interpersonal relationships and limited group and social interests.

### Tomorrow's heart attack

Obesity's emotional toll is obvious even in childhood, but its physical toll often doesn't show up until later. As the American Heart Association's Paul Hartman said recently in a television interview, "The face of heart disease is a 10-year-old sitting in a classroom with high blood pressure."

Writing in *American Family Physician* on evaluating and treating childhood obesity, Dr. Rebecca Moran reports that obese children are at high risk for cardiac problems, including increased heart rates, high cholesterol, and high blood pressure. And they frequently suffer from orthopedic problems, such as bowed legs and stress fractures, as well.

The Nemours Foundation's 2000 report on orthopedics and childhood obesity finds excess body weight—as much as or more than heavy backpacks—puts extraordinary stress on kids' bones and joints. Eric Loveless, an orthopedic surgeon at Nemours Children's Clinic in Jacksonville, Fla., says obese children are likely to suffer trauma to their developing skeletal systems that causes lower back, foot, and knee pain.

Loveless also reports that overweight children are susceptible to developing bone deformities that result in orthopedic problems in adulthood. Childhood

## LEARN MORE

Read "The Obesity Epidemic" by Kathleen Vail on page 22.

## References

Burniat, Walter, and others, editors. *Child and Adolescent Obesity: Causes and Consequences, Prevention and Management*. New York: Cambridge University Press, 2002.

"Childhood Obesity." Interview transcript, University of California-Davis Medical Center, Beth Ryak, host. [www.ucdmc.ucdavis.edu/pulse/scripts/02\\_03/childhood\\_obesity.pdf](http://www.ucdmc.ucdavis.edu/pulse/scripts/02_03/childhood_obesity.pdf).

Chomitz, Virginia, and others. "Promoting Healthy Weight Among Elementary School Children via a Health Report Card Approach." *Archives of Pediatrics & Adolescent Medicine*, August 2003, pp. 765-772.

"Chronic Obesity Linked to Psychopathology in Youth." *Brown University Child and Adolescent Behavior Letter*, April 25, 2003.

Luna, Claire. "School Lunch Menus Getting Upgrades in Nutrition, Appeal." *Los Angeles Times*, September 1, 2003.

Moran, Rebecca. "Evaluation and Treatment of Childhood Obesity." *American Family Physician*, February 15, 1999. [www.aafp.org/afp/990215ap/861.html](http://www.aafp.org/afp/990215ap/861.html).

"Orthopedics and Childhood Obesity—Does it Predict Chronic Adult Diseases?" The Nemours Media Room: Press Release, September 15, 2000. [www.nemours.org/no/news/releases/2000/000915\\_obesity.html](http://www.nemours.org/no/news/releases/2000/000915_obesity.html).

Perez-Pena, Richard. "Obesity on the Rise in New York Public Schools." *New York Times*, July 9, 2003.

Spencer, Priscilla. "Obesity in Children." National Association of School Psychologists, 1998. [www.nasponline.org/pdf/obesity.pdf](http://www.nasponline.org/pdf/obesity.pdf).

Strauss, Richard. "Childhood Obesity and Self-Esteem." *Pediatrics*, January 2000. [www.pediatrics.org/cgi/content/full/105/1/e15](http://www.pediatrics.org/cgi/content/full/105/1/e15).

## Research

obesity, he says, can be “held directly responsible” for causing eventual skeletal problems such as limited motion and bone death.

Like Loveless, Sandra Hassink takes a long view of childhood obesity. Hassink, who directs a weight management program for children in Wilmington, Del., says obese boys and girls often develop chronic diseases associated with middle age during childhood.

### Weighing in on obesity

To prevent a lifetime of poor health, it makes sense to tackle obesity during childhood. While research is clear that the problem can't be cured without parent and community support, there's plenty schools can do.

In Cambridge, Mass., for example, a school-based healthy-weight program keeps track of elementary school students' body-mass index (see sidebar), informs parents of their child's weight and fitness on a special health report card, and provides follow-up information and assistance from school nurses.

A study of the Cambridge initiative, re-

ported in the August 2003 edition of *Archives of Pediatrics & Adolescent Medicine*, found that most parents of overweight children appreciated the health report cards, and several requested help to control their child's weight. Giving parents personal information about their child—as opposed to providing general information about obesity—appears to be a more-effective intervention, the study's research team says.

Another approach involves school food service. In California, where one in four students is overweight or obese, several schools are adopting policies that prohibit the sale of candy and soda in school vending machines. And some schools are replacing excessively high-fat and high-calorie school lunches with healthier menus.

At Agoura Hills Middle School, for instance, kids who once dropped quarters into machines to buy candy bars now find their choices limited to fruit juice and granola bars. (This year, food sold at California's elementary and middle schools must, by law, meet more stringent nutritional requirements. In elementary schools, for ex-

ample, only milk, water, and juice can be sold, and no more than 34 percent of snack calories can come from fat.)

And in San Diego County's Sweetwater Union High School District, food service director Sue Gilroy recently dispensed with the glazed doughnuts, buttery croissants, and super-sized cheeseburgers middle school kids once consumed every day. Now students load up their cafeteria trays with low-fat burritos and bagels.

### An ounce of prevention

For children, as for adults, overcoming obesity is often a frustrating—and unsuccessful—process. Diets and other weight-loss plans can be “psychologically stressful,” says NASP's Spencer, and when they don't work, kids can suffer physical and emotional damage.

She recommends programs that emphasize combining diet and exercise instead of counting pounds gained or lost. But because the causes of obesity are so complex (including genetic, biological, behavioral, and cultural factors), it's essential that children receive a thorough medical evaluation before attempting any kind of weight loss.

Ultimately, the medical experts say, the best hope for combating childhood obesity is prevention. That's the approach in Fit Teens, an after-school program at the UC-Davis medical center that teaches adolescents to be more physically active and make healthy food choices. Gabriella Mahler, a teen participant, says she's exercising and paying attention to what she eats. “I've learned to go for an apple instead of a bag of chips,” Mahler says.

Increasingly, schools are playing a part in efforts to prevent childhood obesity. But they can't do it alone. The answer, say Walter Burniat and other editors of *Child and Adolescent Obesity*, is a combination of efforts at all levels, including individual, family, community, industry, and society—everyone, in fact, who cares about kids.

---

Susan Black, an *ASBJ* contributing editor, is an education research consultant in Hammondsport, N.Y.

## Taking obesity's measure

Obesity is determined by an individual's body mass index (BMI), a standardized measurement that compares height and weight and indicates total amount of body fat. BMI is calculated as weight in pounds multiplied by 703 and then divided by the square of height in inches.

For example, if a boy is 5 feet 3 inches tall and weighs 175 pounds, he would be classified as obese. At 124-141 pounds, overweight; at 88-123 pounds, normal weight; and below 88

pounds, underweight.

Children who fall into the 85th percentile—meaning they weigh more than 85 percent of other children who are the same age and height—have a BMI of 25, a marker that translates into being overweight and at risk of becoming obese. Children in the 95th percentile have a BMI of 30, which represents obesity.

Physicians use the following table of BMI measurements to determine an individual's weight status:

<b>Less than 18.5:</b>	<b>Underweight</b>
<b>18.5 to 24.9:</b>	<b>Healthy weight; low risk</b>
<b>25 to 29.9:</b>	<b>Overweight; moderate risk</b>
<b>30 to 34.9:</b>	<b>Obese; high risk</b>
<b>35 to 39.9:</b>	<b>Obese; very high risk</b>
<b>40 and over:</b>	<b>Morbidly obese; extremely high risk</b>