

Child Overweight and Obesity: Shaping Solutions for the Future

Briefly

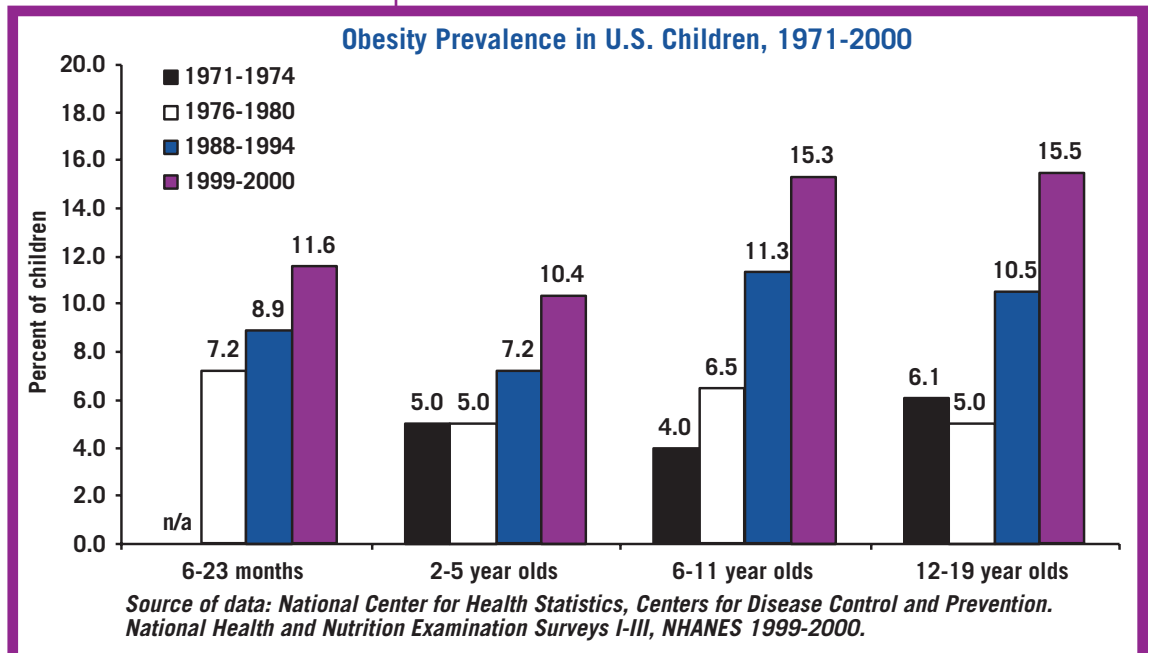
Child overweight and obesity have been on the public's mind and the media's agenda for years, but scrutiny has done little to diminish the problem. The number of overweight kids in the U.S. has tripled in three decades. About 30 percent of American children ages 6 to 11 are too heavy, including 15 percent who are obese.¹ Statistics are similar for adolescents, making overweight the most common chronic health problem facing youth today. Some researchers speculate that the current generation of children may be the first to have a shorter life expectancy than their parents.²

Close to home the numbers are alarming. Indiana ranks ninth in the nation for adult overweight and obesity.³ This statistic is troubling because studies show that overweight adults often raise overweight children.

- Overweight teens have a 70 percent chance of becoming overweight adults.

- This number climbs to 80 percent when at least one parent is overweight.⁴
- Children whose mothers are obese are three times as likely to develop obesity as their peers whose mothers are not overweight.⁵

The good news: Researchers continue to probe the causes and consequences of child obesity, and their findings are helping to shape new initiatives to halt the epidemic.



¹ Ogden, C.L., Flegal, K.M., Carroll, M.D., and Johnson, C.L. Prevalence and Trends in Overweight Among U.S. Children and Adolescents, 1999-2000. *Journal of the American Medical Association*, 2002; 288:1728-32.

² Witt, L. Why We Are Losing the War Against Obesity. *American Demographics*, 2003/2004; 10: 27-31.

³ Centers for Disease Control. *Behavioral Risk Factor Surveillance System, 2002 Prevalence Data*. Retrieved on April 20, 2004 from <http://apps.nccd.cdc.gov/brfss/>

⁴ Office of the Surgeon General. *The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity: Overweight in Children and Adolescents*. Retrieved on March 4, 2004 from <http://www.surgeongeneral.gov/topics/obesity/default.htm>

⁵ Strauss, R.S. and Knight, J. Influence of the Home Environment on the Development of Obesity in Children. *Pediatrics*, 1999; 103: e85.

One size doesn't fit all

Body mass index (BMI) is the accepted way that health professionals assess weight. BMI calculates body weight adjusted for height. Because factors such as age and gender influence BMI numbers, BMI measurements take those variables into account. This *Issue Alert* defines an overweight child as one who is at or above the 85th percentile of BMI, and an obese child as one who is at or above the 95th percentile.

Weighing the consequences

A recent study reports that parents are beginning to recognize overweight and obesity in their children; however, they aren't always aware of the physical and emotional risks. Research that compares obese youth with peers of normal weight reports these somber conclusions:

- Obese youth are 12.6 times as likely to develop factors contributing to Type II diabetes.
- Obese children are at a higher risk of elevated blood pressure and cholesterol levels, and orthopedic problems.⁶
- Obese children are five times as likely to have a lower physical, emotional, and social quality of life than children of average weight.
- Obese students miss four times as many school days.⁷
- Obese children tend to have fewer friends and feel socially isolated.
- Obese teens teased about their weight are more likely to think about and attempt suicide.⁸

High cost of obesity

As the number of obese children has escalated, so has the cost of addressing the problem. Hospital fees related to child obesity more than tripled—from \$35 million to \$127 million—in the period from 1979 to 1999. Those numbers do not include physician visits and medication.⁹ When related costs are factored in, the nation annually spends an estimated \$75 billion on obesity issues.

In an average year, Indiana residents pay \$1.6 billion in obesity-related medical costs. Of that amount, \$379 million is billed to Medicare, which represents 7.2 percent of Indiana's total Medicare expenditures.¹⁰ In addition, \$522 million is paid with Medicaid money, representing 15.7 percent of Indiana's total Medicaid expenditures. In comparison, medical costs related to smoking also add up to \$1.6 billion annually, with \$380 million paid by Medicaid.¹¹

Who's at risk?

Certain circumstances heighten the risk of children developing overweight and obesity. Factors that influence the BMI of youth include:

- **Income level**—Twice as many teens from poor households are overweight or obese as teens from middle- and high-income households.¹²
- **Race and ethnicity**—Some minority groups are more likely to experience overweight and obesity than their white peers. Whereas 26 percent of white children ages 6-11 are overweight, 36 percent of black youth and 39 percent of Mexican-American children are overweight. The numbers increase as the youth move into their teen years. Of youth ages 12-19, more than 40 percent of black students and 44 percent of Mexican-American students are overweight as compared with almost 27 percent of their white classmates.¹³

⁶ American Obesity Association. *AOA Factsheets: Obesity in Youth*. Retrieved on March 11, 2004 from http://www.obesity.org/subs/fastfacts/obesity_youth.shtml

⁷ Schwimmer, J.B., Burwinkle, T.M., and Varni, J.W. Health-Related Quality of Life of Severely Obese Children and Adolescents. *Journal of the American Medical Association*, 2003; 289: 1813-1819.

⁸ Eisenberg, M., Neumark-Sztainer, D., and Story, M. Associations of Weight-Based Teasing and Emotional Well-Being Among Adolescents. *Archives of Pediatrics and Adolescent Medicine*, 2003; 157: 733-738.

⁹ Wang, G. and Dietz, W. Economic Burden of Obesity in Youths Aged 6 to 17 Years: 1979-1999. *Pediatrics*, 2002; 109: e81.

¹⁰ Finkelstein, E.A., Fiebelkorn, I.C., and Wang, G. State-Level Estimates of Annual Medical Expenditures Attributable to Obesity. *Obesity Research*, 2004; 12: 18-24.

¹¹ Indiana Tobacco Prevention and Cessation. *Fact Sheet: Indiana's Tobacco Burden*. Retrieved on April 27, 2004 from http://www.in.gov/itpc/files/research_87.pdf

¹² *Healthy People 2010. Leading Health Indicators*. Retrieved on March 12, 2004 from http://www.healthypeople.gov/document/html/uih/uih_4.htm

¹³ Ogden, C.L., Flegal, K.M., Carroll, M.D., and Johnson, C.L. Prevalence and Trends in Overweight Among U.S. Children and Adolescents, 1999-2000. *Journal of the American Medical Association*, 2002; 288:1728-32.

- **TV viewing**—Children who average two hours of TV or more on weeknights have a BMI 48 percent higher than their classmates.¹⁴ (On average, children ages 2-17 watch 2.5 hours of TV daily.)¹⁵
- **Eating habits**—Two servings of dairy products a day are linked to a *reduction* in teen obesity, but childhood dairy intake has fallen for 20 years, and soft drink consumption has risen by 300 percent.¹⁶ A British study determined that a school program discouraging consumption of soft drinks was effective in reducing obesity among participants.¹⁷
- **Parental involvement**—Unsupervised children may make poor nutritional selections for snacks and meals, and they may be less inclined to exercise. Time constraints may force parents to rely on high-calorie prepared foods and fast foods. For example, a correlation exists between a child’s weight and the number of hours a mother works outside the home.¹⁸
- **Physical activity**—Activity levels for children have decreased dramatically in recent years. The National Association of Sport and Physical

Education recommends 150 minutes per week of physical education activity in school, but a recent study shows 96 percent of surveyed elementary schools in Indiana fail to meet that standard.¹⁹

What’s working

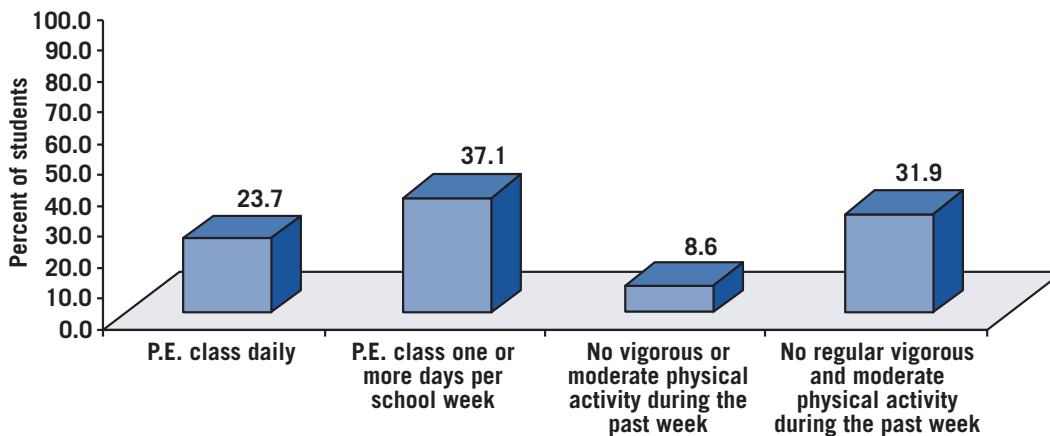
Researchers have discovered no quick fix to the complex problem of child overweight and obesity, but many efforts are under way to respond to it.

Nationally, four states—Indiana among them—are participating in a pilot study sponsored by the U.S. Department of Agriculture. The government has earmarked funds to provide students at 25 Hoosier schools with fruits and vegetables during non-lunch hours. The goal is to decrease the consumption of unhealthy snacks and increase student awareness of and preference for nutritious foods. Initial findings include some participating schools reporting lower volumes of sales of candy and other less nutritious foods. Other perceptions from participating schools include increased attention in class, fewer visits to the school nurse, reduced consumption of less healthy food, reduced number of unhealthy snacks brought from home, and increased student

awareness of and preference for a variety of fruits and vegetables.

Meanwhile the Indiana State Department of Health has begun working on Indiana’s strategic plan to combat child and adolescent obesity. The plan, called “Sharing the Responsibility: Shaping the Future of Indiana Children,” consists of five action areas: increasing awareness of obesity as a

Physical Activity of Indiana Students Grades 9-12, 2003



Source of data: 2003 Indiana Youth Risk Behavior Survey, Indiana State Department of Health.

¹⁴ Giammattei, J., Blix, G., Hopp Marshak, H., and Colleagues. Television Watching and Soft Drink Consumption. *Archives of Pediatrics and Adolescent Medicine*, 2003; 157: 882-886.

¹⁵ Woodard, E.H. and Gridina, N. *Media in the Home 2000: The Fifth Annual Survey of Parents and Children*. The Annenberg Public Policy Center, 2000. Retrieved on March 11, 2004 from http://www.annenbergpublicpolicycenter.org/05_media_developing_child/mediasurvey/survey7.pdf

¹⁶ Moore, L.L., Singer, M.R., Bradlee, M.L., and Ellison, R.C. *Dietary Predictors of Excess Body Fat Acquisition During Childhood*. Presentation to the American Heart Association 44th Annual Conference on Cardiovascular Disease Epidemiology and Prevention, March 4, 2004.

¹⁷ James, J., Thomas, P., Cavan, D., and Kerr, D. Preventing Childhood Obesity by Reducing Consumption of Carbonated Drinks: Cluster Randomised Controlled Trial. *British Medical Journal*. April 2004; doi:10.1136/bmj.38077.458438.EE

¹⁸ Anderson, P., Butcher, K., and Levine, P. *Maternal Employment and Overweight Children*. Joint Center for Poverty Research, Northwestern University/University of Chicago.

¹⁹ Indiana Department of Education, Office of Program Development. *Evaluation of Physical Fitness Programs in Indiana Schools*. Retrieved on March 17, 2004 from <http://www.doe.state.in.us/opd/physed/response.html>

public health issue, promoting opportunities for lifestyle change, enabling legislation around nutrition and physical activity, monitoring obesity rates and related health conditions, and identifying stakeholders to support future work.

In Indiana, each county has a Step Ahead council that coordinates services to children and families in that county. Each council identifies its own focus areas, but the Step Ahead councils have voted to make child obesity a shared focus among all county councils. Many councils are partnering with their local WIC programs, county extension offices, and schools to raise community awareness of child overweight and obesity.

The Purdue Extension service recognized that children in low-income families may not be eating enough fresh fruits and vegetables. The majority of county extension offices now offer family nutrition programs to families with limited resources to help them maximize their food dollars and food stamps. The programs focus on developing knowledge and skills related to nutrition and meal planning, food purchasing, preparation and safety, and food budgeting.

On a regional level, several Indiana counties have launched programs of prevention and intervention. Here's a sampling:

Elkhart County: Community-based organizations are collaborating on two multi-faceted pilot programs aimed at Title 1 elementary school students. The first, "Lunchbuddies for Better Nutrition," strives to increase the amount of fruit, vegetables, and milk third and fourth graders consume through the school lunch program. The second project targets overweight fourth graders and their families, addressing fitness, nutrition, and other lifestyle changes through interventions such as "One Step at a Time," an individualized walking program.

Allen County: Parkview Hospital offers "SHAPEDOWN," a national program that encourages families to make sweeping lifestyle changes. Classes meet for 10 weekly sessions and address behavior change, exercise, and nutrition topics. Following the program, a booster group convenes monthly. Move to Improve, a partnership of the Fort Wayne Parks and Recreation Department and 23 local agencies, is a fitness and nutrition initiative to educate and motivate the community on healthy lifestyle choices.

Vanderburgh County: For more than 10 years the national "Food Groupie" program has reached out to children in schools, pre-schools and daycare facilities. The goal is to make students aware of nutrition and the importance of limiting food portions. Because the audience is young, the program keeps instruction to a minimum and uses puppets and other visual aids to make key points. In addition, the Vanderburgh County Step Ahead Council partners with their county extension office to offer the "Professor Popcorn" program, which teaches nutrition to elementary students.

Wells County: Funded by The Robert Wood Johnson Foundation and other major partners, "Operation Wellness" is a collaborative school/community project designed to increase physical activity, improve nutrition, and enhance the health of Wells County residents of all ages. Children receive nutrition education with hands-on food preparation and taste testing. Additional activities include exercise opportunities offered in conjunction with the school districts, a weekly newspaper column, family fun activities, and drama, creative arts, and yoga for children.

Fountain-Warren Counties: Supported by a national grant, local schools are tracking the fitness progress of students as they work through 24 activity stations. Each student has a data card that lists BMI, resting heart rate, etc. Comparative assessments occur three times each semester.

Delaware County: Each county receives a portion of Indiana's tobacco settlement funds to support public health programs. Delaware County used this money to create a mini-grant program and invited local organizations to apply for funding. At the time of publication, three community organizations had received grants to operate children's health improvement programs and implement physical fitness activities.

Louisville, KY: The nonprofit Heuser Clinic's Youth Fitness Training offers Clark and Floyd County youth a 12-week program consisting of cardiovascular exercise, weight training, and nutritional education. The goal of the program is to help severely obese youth achieve a healthy weight and body fat level as well as change the thought process involved in making food choices.

CHILD OBESITY FACTS

PRESCHOOL (UNDER AGE 6)

In 1999-2000, 20.6% of 2-5 year olds were at or above the 85th percentile; 10.4% were at or above the 95th percentile. Among infants from birth through 23 months, 11.4% were overweight (at or above the 95th percentile).

On any given day, one-third of toddlers 19-24 months are not consuming a vegetable and nearly 20% are not consuming any fruit.

French fries are the most commonly consumed vegetable for toddlers ages 15-24 months.

Odds of an obese 1 or 2-year-old becoming an obese adult is 1.3 times greater than a child who is not obese.

On a typical day, approximately 25% of children ages 4-8 years old eat fast food.

Nearly a third of mothers did not realize that their children ages 2 to 11 were overweight.

Source of data: See www.iyi.org/library_reference/issue_alerts.html for sources.

SCHOOL-AGE (AGES 6-11)

In 1999-2000, 30.3% of 6-11 year olds were at or above the 85th percentile; 15.3% were at or above the 95th percentile.

On a typical day, approximately 26% of children ages 9-13 years old eat fast food.

Children ages 9-13 report consuming around 1 serving of soda per day.

61.5% of children ages 9-13 years do not participate in any organized physical activity during their nonschool hours. 22.6% do not engage in any free-time physical activity.

Children ages 9-14 who reported going on diets gained more weight than those who did not.

ADOLESCENT (AGES 12-19)

In 1999-2000, 30.4% of 12-19 year olds were at or above the 85th percentile; 15.5% were at or above the 95th percentile.

80% of 9th-12th graders consumed less than 5 servings of fruits and vegetables per day.

Odds of an obese 15-17 year old becoming an obese adult is 17.5 times greater than a child who is not obese.

On a typical day, approximately 39% of children ages 14-19 years old eat fast food.

Females ages 14-18 report consuming around 1½ servings of soda per day. Males ages 14-18 report consuming 2½ servings of soda per day.

43% of adolescents watch more than 2 hours of television each day.

74% did not participate in sufficient moderate physical activity during the course of a week.

WEIGHT-RELATED BEHAVIORS, INDIANA: 2003

Percentage of students in grades 9-12 who described themselves as slightly or very overweight: 32.2%

Percentage of students in grades 9-12 who are trying to lose weight: 46.7%

Percentage of students in grades 9-12 who exercised to lose weight or to keep from gaining weight during the past 30 days: 62.4%

Percentage of students in grades 9-12 who ate less food, fewer calories, or foods low in fat to lose weight or to keep from gaining weight during the past 30 days: 43.3%

Percentage of students in grades 9-12 who went without eating for more than 24 hours to lose weight or to keep from gaining weight during the past 30 days: 13.4%

Percentage of students in grades 9-12 who took diet pills, powders, or liquids without a doctor's advice to

lose weight or to keep from gaining weight during the past 30 days: 10.1%

Percentage of students in grades 9-12 who vomited or took laxatives to lose weight or to keep from gaining weight during the past 30 days: 4.8%

Percentage of students in grades 9-12 who ate five or more servings of fruit and vegetables per day during the past seven days: 20.3%

Percentage of students in grades 9-12 who drank three or more glasses of milk per day during the past seven days: 21.2%

Percentage of students in grades 9-12 who watch 3 or more hours of television each school day: 32.9%

Source of data: 2003 Indiana Youth Risk Behavior Survey, Indiana State Department of Health.

Recommendations

- The International Obesity Task Force concluded that prevention of weight gain is easier, less costly, and more effective than treating overweight after it has fully developed. Thus, interventions should begin with children sooner rather than later, when lifestyle habits are harder to influence.
- Studies suggest that BMI is extremely stable between 9 and 17 years of age and primary prevention of overweight should begin before age 9.
- While medically supervised diets may be beneficial for obese children, researchers recommend small dietary and lifestyle changes that can be maintained over the long term for the majority of children, such as increasing fresh fruit and vegetable intake and cutting back on soda and fast foods, and increasing physical activity levels.
- Reduce TV viewing time by building in family activities that not only burn calories but also promote interaction between parents and kids. When choosing a physical activity that everyone can enjoy, give priority to sports that children can continue to pursue into adulthood.
- Parents, caregivers, and other adults should model wise eating and fitness habits.
- Youth agencies can help reduce factors contributing to child overweight and obesity by incorporating physical activity into their routines and offering healthy snacks.

Other Indiana Youth Institute Resources

IYI's Web Site – www.iyi.org

- A growing source of reliable information to youth workers, including new reports, county data on Indiana youth, and IYI's entire catalog of library materials that can be borrowed online.
- IYI's Kids Count database contains indicators such as child population, school enrollment, and child poverty.
- IYI's Web site also features summaries of recent information culled from journal articles, newspapers, books, and government sources. Links to the full-text reports are provided.
- Can't find the data you need on our Web site? An IYI staff member is available to answer data-related questions and provide custom research.


Virginia Beall Ball Library

- An outstanding 6,000-title collection of materials on healthy youth development, youth service delivery, nonprofit management, and fund raising. All materials can be borrowed free through IYI's Web site or through our toll-free main number. IYI's librarian is available to answer reference questions.

IYI Weekly Update

- A quick, no-cost source of relevant reports, policy updates, grant tips, and other easy-to-read, useful information received by over 8,000 youth workers each week.

For more services, visit www.iyi.org or call 800-343-7060.

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