

# Overweight and Obesity: Third Grade Children

Ohio's third-grade BMI surveillance program began collecting height and weight data on third-grade students in the 2004-2005 school-year. The program provides important data to monitor trends and changes in a population that is used to develop and implement public health policies and strategies for improving child health. It is conducted in collaboration with Ohio's Oral Health Survey and provides estimates of overweight and obesity annually for the state and approximately every five years for each county.<sup>1</sup>

## Children's Health and Well-Being

Overweight and obesity have devastating effects on quality of life throughout childhood and adolescence, including social and psychological well-being.<sup>2</sup>

Obesity increases the risk of:

- poor performance in school
- discrimination
- low self-esteem
- anxiety disorders
- depression
- suicide<sup>3</sup>

Many health complications previously limited to adults now develop among overweight and obese youth:

- High blood pressure
- High cholesterol
- Glucose intolerance, insulin resistance and type 2 diabetes
- Breathing problems (e.g., sleep apnea and asthma)
- Joint problems and discomfort
- Fatty liver disease, gallstones, and heartburn

Childhood overweight predicts obesity later in life and its health complications often persist or worsen in adulthood. When obesity continues into adulthood it reduces life expectancy and increases the risk of the complications listed above as well as stroke, some cancers and complications during pregnancy.

## Cost Impact

Overweight and obesity affect the economy by increasing direct medical costs (e.g., preventive, diagnostic and treatment) and indirect morbidity and mortality costs (e.g., lost productivity, absenteeism and premature death). These hidden costs may particularly affect the future workforce.

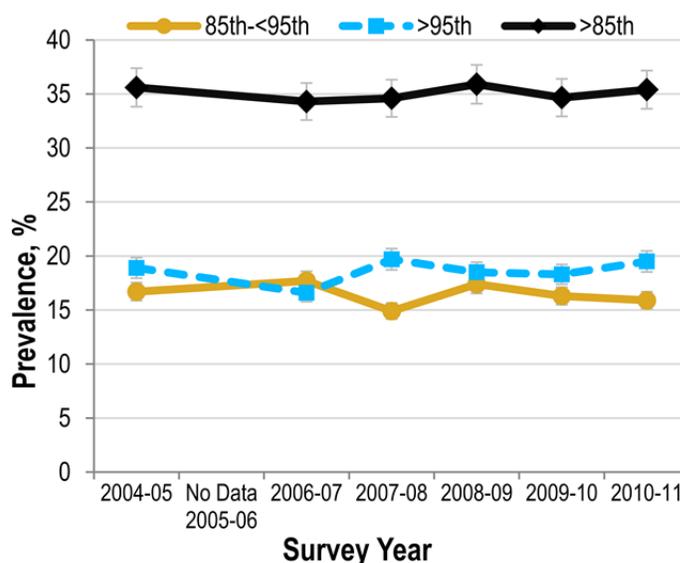
More than \$2.9 billion are spent in additional health costs for overweight and obese children in the U.S., compared with children who maintain a healthy weight.<sup>3</sup>

In Ohio, the estimated financial burden of obesity was \$6.9 million per year in 2009, and 43.8% of expenses were financed through Medicaid or Medicare.<sup>4</sup>

*Since 2004, there has been no significant change in the overall percentage of Ohio third graders who are overweight or obese.*

- National data suggest the same trend.<sup>5</sup>
- However, among Ohio children living in suburban counties, and children not participating in free or reduced price meal programs, there has been a small decrease in obesity (data not shown).<sup>6</sup>

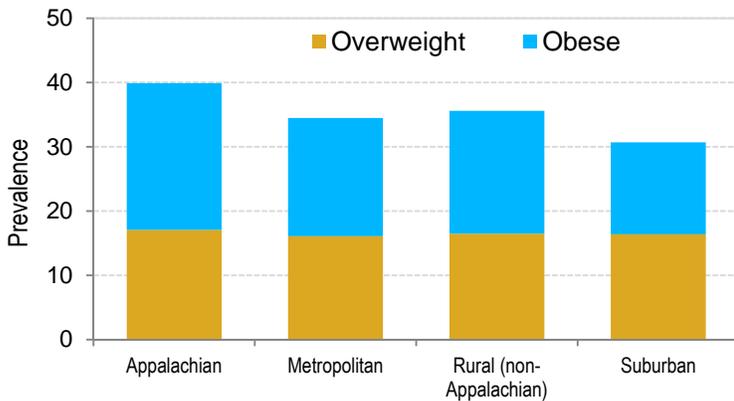
## Overweight and Obesity among Third-Grade Students in Ohio, 2004-2011



## Among Ohio Third-Grade Students (2010-11):

- 19.5% were **OBESE**,  
an estimated 524,161 children
- 15.9% were **OVERWEIGHT**,  
an estimated 427,393 children

## Overweight and Obesity among Ohio Third Graders by County Type, 2009-10



## How is Obesity Distributed?

The prevalence of overweight and obesity among Ohio third-grade children in 2010-2011 was similar to that of children of the same age nationally. In Ohio 35.3% (95% Confidence Interval (CI): 31.4-39.4) of third graders were overweight or obese (BMI  $\geq$ 85th), with 19.5% (95% CI: 16.4-22.7) being obese. Nationally in 2009-2010, 32.6% (95% CI: 30.1-35.2) of children aged 6 to 11 years were overweight or obese, with 18.0% (95% CI: 16.3-19.8) being obese.<sup>5</sup>

However, within Ohio, geographic disparities are present. In 2009-10, 22.9% of children living in Appalachian counties were obese compared with 14.3% of children living in suburban counties.

Similar disparities exist by race where the burden of obesity falls most heavily on Hispanic children, 30.7% of whom were obese compared with 17.2% of non-Hispanic white children (data not shown).<sup>1</sup>



## What Is Being Done to Decrease Overweight and Obesity in Ohio?

Many private, non-profit and government organizations have worked to promote a healthy lifestyle and to fight the obesity epidemic among youth. Examples include:

- Healthy Choices for Healthy Children Legislation
- Ohio Action for Healthy Kids
- Early Learning & Development Standards (include physical well-being and motor development)
- Ounce of Prevention Toolkit for Healthcare Providers
- ODH School and Adolescent Health Programs:
  - Coordinated School Health
  - Healthy School Leadership Program
  - BMI Screening Technical Assistance Program (training and equipment loan)
- ODH Healthy Ohio Initiatives (e.g., Creating Healthy Communities)
- ODH WIC Breastfeeding Peer Helper Program
- ODH Bureau of Child & Family Health Services (BCFHS) grants to child care centers and K-12 schools to increase nutrition education, access to healthy food choices, and physical activity

*“Because of the increasing rates of obesity, unhealthy eating habits, and physical inactivity, we may see the first generation that will be less healthy and have a shorter life expectancy than their parents.”*

*– US Surgeon General Richard Carmona, 2004*

## Childhood Overweight and Obesity Defined

Overweight refers to excessively high body weight in relation to height, and we measure it using the Body Mass Index (BMI). There is some debate about the validity of BMI as a measure of fat, but body fatness and BMI have been shown to correlate in children and teens. The intent of BMI surveillance in schools is to collect data anonymously to monitor the proportion of students who are overweight or obese. Conversely, screening programs identify children for referral for follow-up.

For children and adolescents, a child’s BMI is compared to children of the same sex and age using the CDC BMI-for-age growth charts to obtain a percentile ranking that indicates the child’s relative position among their peers. The child is then classified as follows:

Obese	BMI at or above the 95th percentile
Overweight	BMI at or above the 85th percentile, but below the 95th
Healthy	BMI at or above the 5th percentile, but below the 85th percentile
Underweight	BMI below the 5th percentile

*Data Notes: Data was not collected during the 2005-2006 school year. The width of the 95 percent confidence Interval gives us an idea of how certain we are about the true prevalence. If we were to repeat this study 100 times, 95 of the intervals generated would contain the true estimate.*

### References

1. Oza-Frank R, Norton A, Scarpitti H, Wapner A, Conrey E (2011 March). A Report on the Body Mass Index of Ohio’s Third Graders: 2009-2010. Ohio Department of Health, Columbus, OH. <http://www.odh.ohio.gov/~media/ODH/ASSETS/Files/health%20resources/reports/2011bmi-report.ashx>
2. Barlow SE and the Expert Committee. Expert committee recommendations regarding the prevention, assessment, and treatment of child and adolescent overweight and obesity: summary report. Pediatrics 2007; 120 Supplement December 2007:S164–S192.
3. Trasande L, Chatterjee S. Corrigendum: The Impact of Obesity on Health Service Utilization and Costs in Childhood. Obesity 2009; 17(7):1473.
4. Trogon JG, et. al. State- and payer-specific estimates of annual medical expenditures attributable to obesity. Obesity. 2012 Jan; 20(1):214-20.
5. Ogden CL, et.al. Prevalence of Obesity and Trends in Body Mass Index Among US Children and Adolescents, 1999-2010. JAMA. 2012; 307(5):483-490.
6. Oza-Frank R, Hade E, Norton A, Scarpitti H, Conrey E. Trends in body mass index among Ohio’s third grade children: 2004-2005 to 2009-10. In Press. JAND.

Data Contact: Elizabeth J. Conrey  
[Elizabethj.conrey@odh.ohio.gov](mailto:Elizabethj.conrey@odh.ohio.gov)  
 Program Contact: Angela Norton  
[Angela.norton@odh.ohio.gov](mailto:Angela.norton@odh.ohio.gov)

Ohio Department of Health  
[www.odh.ohio.gov](http://www.odh.ohio.gov)

