



Mahoning County

DISTRICT BOARD OF HEALTH

Growth Monitoring of Children in Springfield Schools

Purpose The purpose of this document is to update Springfield school district officials and parents on the results of periodic growth monitoring of schoolchildren that takes place in the school district and the changing prevalence of obesity in these children.

Background Some health experts have recommended that schools conduct annual assessments of each student's height, weight and gender and age-specific Body Mass Index (BMI) percentile and make this information available to parents.¹ The District Board of Health staff, nursing students from Youngstown State University, and medical students from the Northeastern Ohio Universities College of Medicine weighed and measured Springfield students in grades K-12 during the 1999-2000, 2000-2001, 2004-2005, and 2006-2007 school years. Individual records were created for each child in a growth monitoring registry (EpiInfo) provided by the U.S. Centers for Disease Control and Prevention (CDC). The registry was used to calculate BMI and plot a growth curve for each child. In 2004 for the first time, the school district mailed individual growth charts with a letter from the school nurse explaining the results to the parents of each child who was weighed and measured during the school year.

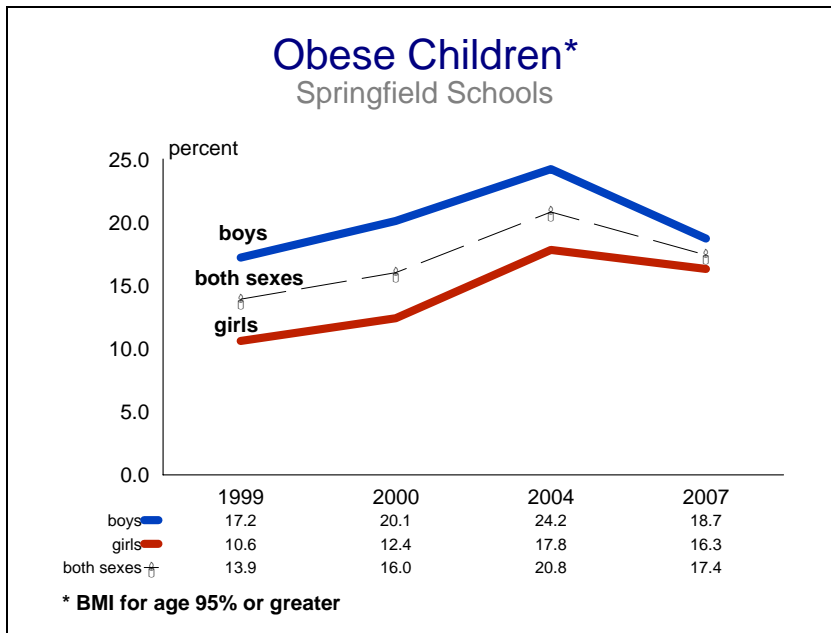
The value of BMI BMI – the ratio of a child's weight to his or her height – is a relatively easy-to-ascertain indirect measure of obesity that is closely related to health risks. Recent studies have shown that 60% of children and teens with a BMI-for-age at or above the 95th percentile have at least one risk factor for cardiovascular disease.² Using results from the *National Health and Nutrition Examination Survey*, CDC has created standardized percentile curves of BMI that may be used to monitor the growth of children over time and compare an individual child with others of the same sex and age. The extremes in BMI-for-age percentiles that raise concern for children 2 to 20 years of age are:

Underweight	BMI-for-age <5 th percentile
At risk for obesity	BMI-for-age ≥85-94 th percentile
Obese	BMI-for-age ≥95 th percentile

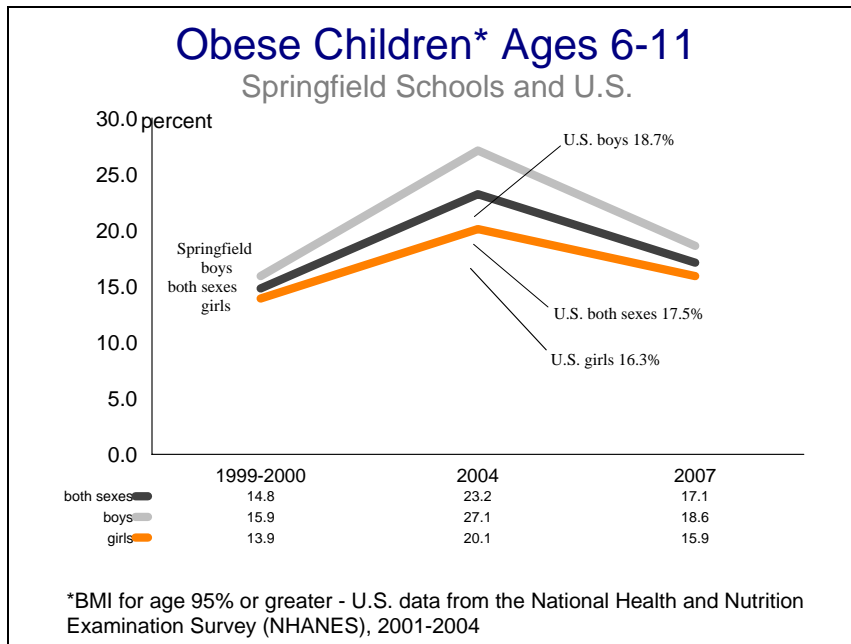
Obesity rates decline in 2007 Consistent with the increasing obesity rates in schoolchildren nationally, obesity prevalence in Springfield schoolchildren, both boys and girls in all age groups, increased between 1994-2004. **However, this upward trend was reversed in 2007 when the overall prevalence of obesity in all Springfield students declined to 17.4% from 20.8% in 2004** (next page).

¹ Institute of Medicine of the National Academies of Science. Preventing childhood obesity. Washington DC: The National Academies Press, 2005.

² Freedman DS et al. The relation of overweight to cardiovascular risk factors among children and adolescents: The Bogalusa Heart Study. *Pediatrics* 1999;103:1175-1182.

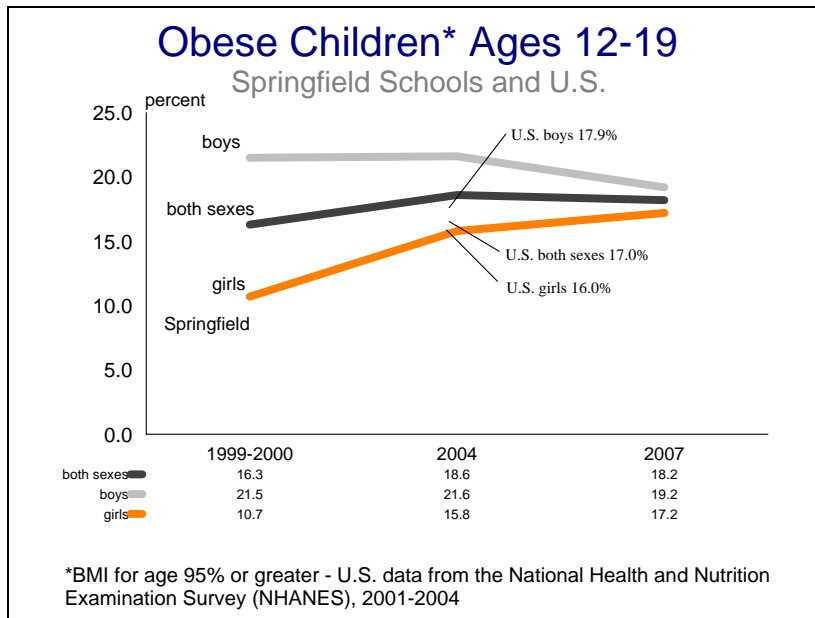


This decline in obesity rates was greatest among younger children. The percentage of boys and girls ages 6-11 who were obese in 2007 declined from 23.2% in 2004 to 17.1% for both sexes.



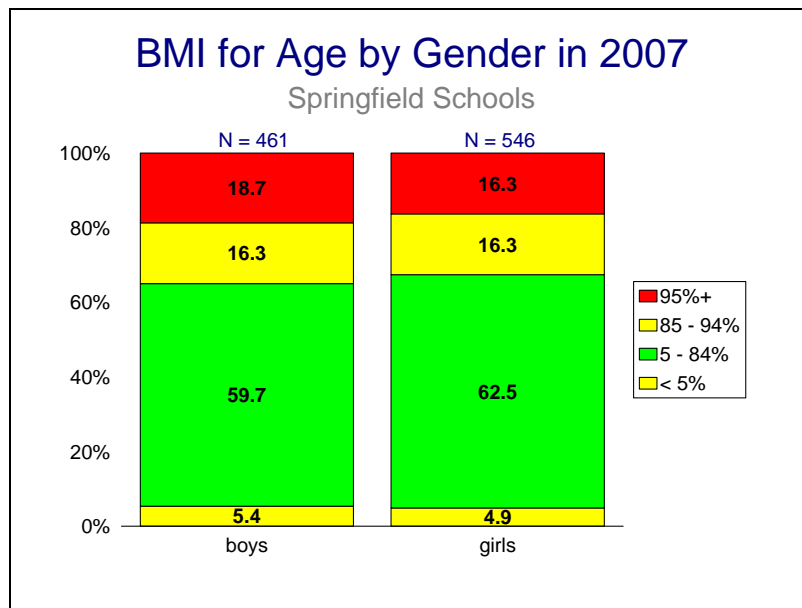
Adolescent obesity rates

Among adolescents ages 12-19 the decline in obesity prevalence was less pronounced than among younger children in Springfield schools – from 18.6% in 2004 to 18.2% in 2007 for both sexes. Obesity prevalence increased among adolescent girls in 2007 to 17.2% from 15.8% in 2004.



More children in the healthy BMI range

In 2007, 59.7% of the 461 boys measured from all grades in Springfield schools were in the healthy BMI range of 5 – 84% of BMI for age, an increase from 55.8% in 2004 . Among the 546 girls measured, 62.5% were in the healthy BMI range, an increase from 60.6% in 2004.




Part of a national trend?

Although comparative results from the *National Health and Nutritional Examination Survey* for 2007 are not yet available, obesity prevalence among the 366,801 Arkansas schoolchildren measured during the 2006-2007 school year suggests that the increase in obesity rates has begun to level off in other geographic areas of the U.S. Growth monitoring results from Springfield schools may reflect both a positive local and national trend in child obesity rates.

Category	Year 1 ('03-'04)	Year 2 ('04-'05)	Year 3 ('05-'06)	Year 4 ('06-'07)
Overweight	20.9%	20.8%	20.5%	20.6%
At risk for overweight	17.2%	17.2%	17.1%	17.2%
Healthy weight	60.1%	60.1%	60.5%	60.4%
Underweight	1.8%	1.9%	1.9%	1.8%
Total students assessed*	347,753	368,871	369,416	366,801

Results include all data available for years 1, 2 and 3 for grades K-12 and data received by June 6, 2007 for year 4. Data source: Arkansas Center for Health Improvement. Year Four Assessment of Childhood and Adolescent Obesity in Arkansas (Fall 2006-Spring 2007), Little Rock, AR: ACHI, September 2007.



U.S. schools improving on nutrition and fitness

In October, the CDC reported that the nation’s schools have made considerable improvements in nutrition, fitness, and health over the last six years.³ The survey, conducted every six years, showed that in 2006:

- More schools required physical education in elementary schools (93%, up from 83% in 2000)
- 30% of schools banned junk food from vending machines (up from 4% in 2000)
- The proportion of schools selling bottled water grew to 46% from 30% in 2000

However, less encouraging were CDC findings that just 4% of elementary schools, 8% of middle schools, and 2% of high schools required physical education each school day as recommended. *One-fifth of schools did not require physical education at all.* Also, 75% of high schools sold soft drinks and 61% sold potato chips and other high-fat snacks.

Since 1999 Springfield schools have adopted many recommended practices to improve nutrition and fitness for students in the school district. Growth monitoring results from the 2006-2007 school year may be evidence that sound school health policies can influence child obesity rates.

Reported by:

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³ U.S. Centers for Disease Control and Prevention. SHPPS: School Health Policies and Programs Study, 2006. <http://www.cdc.gov/HealthyYouth/shpps/index.htm>. Accessed November 27, 2007.