

Are We Measuring Up? Body Mass Index Screening at School

Overview

Body Mass Index (BMI) is a screening tool that classifies adiposity (body fatness) in children and adults. BMI is calculated using weight and height and is an inexpensive and easy to perform method of screening for overweight. BMI is an indirect measure of body fatness that correlates well with direct measures of body fatness, such as dual energy x-ray absorptiometry also known as DXA.

Calculating BMI

$$\text{BMI} = \left[\frac{\text{Weight in Pounds}}{(\text{Height in inches}) \times (\text{Height in inches})} \right] \times 703$$

$$\text{BMI} = \frac{\text{Weight in Kilograms}}{(\text{Height in meters}) \times (\text{Height in meters})}$$

CDC BMI Calculator: <http://www.cdc.gov/nccdphp/dnpa/bmi/index.htm>

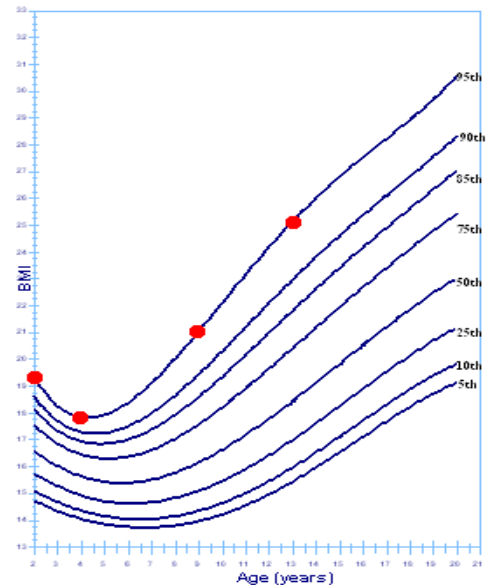
BMI In Children

For children, BMI is adjusted for age and gender and is reported as a BMI-for-age percentile, such as the 75th percentile. The Centers for Disease Control and Prevention (CDC) and the American Academy of Pediatrics recommend annual BMI screening for all children and adolescents, beginning at 2 years old.

For children, BMI is used to screen for overweight, at risk of overweight, or underweight. However, BMI is not a diagnostic tool. For example, a child may have a high BMI for age and sex, but to determine if excess fat is a problem, a health care provider would need to perform further assessments, that might include skinfold thickness measurements, evaluations of diet and physical activity, family history and other appropriate health screenings.

BMI-for-age Growth Charts, CDC 2000
<http://www.cdc.gov/nchs/about/major/nhanes/growthcharts/charts.htm>

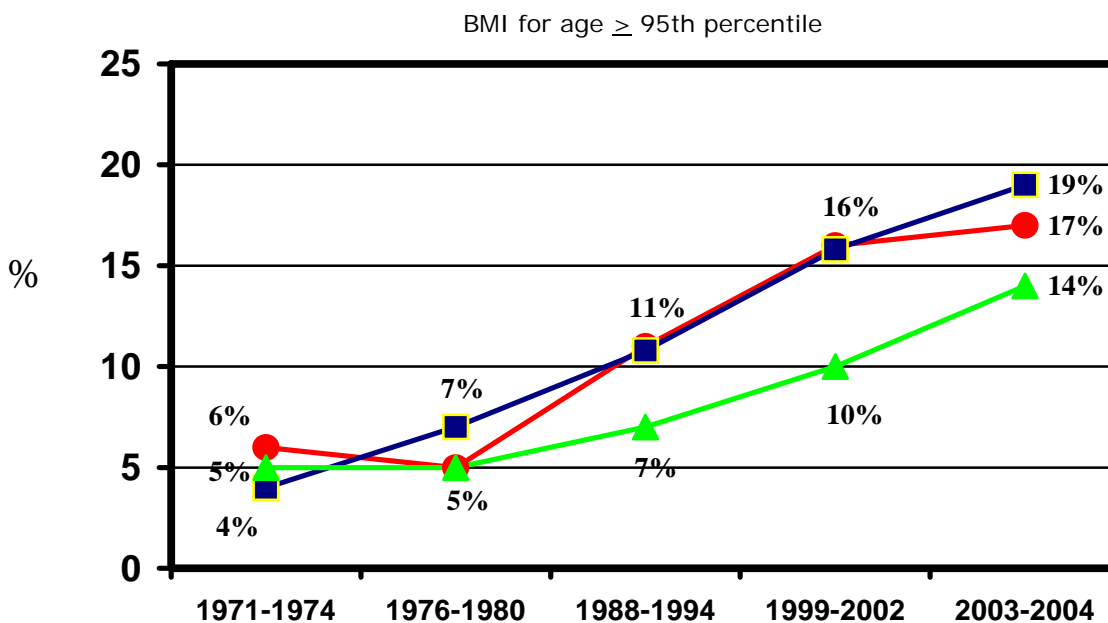
Boys: 2 to 20 years



Know Your Numbers: CDC BMI-for-age Percentiles

Underweight	BMI-for-age < 5th percentile
Normal	BMI-for-age 5th percentile to < 85th percentile
At risk of overweight	BMI-for-age 85th percentile to < 95th percentile
Overweight	BMI-for-age ≥ 95th percentile

Prevalence of Overweight among Children and Adolescents National Health and Nutrition Examination Survey (NHANES), 1971-2004



JAMA, Ogden et al, 2006

School-based BMI Screening: Overview

In the 2004 Institute of Medicine (IOM) report, "Preventing Childhood Obesity, Health in the Balance," childhood obesity was identified as a "critical public health threat" and a "national public health priority." Among several recommendations included in the IOM's "prevention-focused action plan to decrease the prevalence of obesity in children and youth in the United States" was the following ... "State and local education authorities and schools should ... conduct annual assessments of each student's weight, height and gender- and age-specific BMI percentile and make this information available to parents." (<http://www.iom.edu>)

School-based BMI Screening & Reporting: An Example of a Statewide Effort

Arkansas Legislative Act 1220 was enacted in 2003 and "called for a coordinated, multi-level effort to combat childhood obesity." Among the components of the act was a requirement that annual BMI screening be provided every public school student with results sent to parents in a confidential report. A report detailing Year Two Evaluation is available at <http://www.uams.edu/coph/reports/Act1220Eval.pdf> and provides an informative overview of the history of the legislation, implementation in the school setting and opinions of parents, students, school nurses and health providers involved in the screening.

School-based BMI Screening & Reporting: Results from a Pilot Program conducted in MN School District, ISD 191

Kubik MY, Fulkerson JA, Story M, Reiland G. Parents of elementary school students weigh in on height, weight and BMI screening at school. *Journal of School Health*, 2006; 76(10), 496-501.

Kubik, MY, Story M, Reiland G. Developing school-based BMI screening and parent notification programs: Findings from focus groups with parents of elementary school students. *Health Education and Behavior*, 2006; 33: Retrieved from <http://heb.sagepub.com/cgi/rapidpdf/>.

