

# Research & Policy Brief

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## Body Mass Index (BMI) Screening in School Settings

### Overview

Despite public health efforts, many youth are not maintaining a healthy weight. Body Mass Index (BMI) is used as a screening tool to assess weight. BMI data from the 2003-2004 National Health and Nutrition Examination Survey (NHANES) indicates that an estimated 17% of U.S. children and adolescents ages 2-19 years are overweight. These findings suggest the likelihood of another generation of adults who will be at risk for obesity-related health conditions.<sup>1</sup>

Schools contribute to the overall health and academic performance of youth. Since schools have access to a large population of children, they can provide an environment where many youth can be screened for weight-related health risks among other health issues. Many schools are considering measuring BMI as part of regular student health screenings. However, more research is needed to determine if BMI screening will have an effect on the youth overweight and obesity epidemic.<sup>1</sup>

### BMI Defined

BMI is a measurement of an individual's weight in kilograms divided by height in meters squared. In adults BMI is used as a standard measurement tool to assess weight. Due to rapid growth and gender differences, BMI measurements in children over age 2 must be age and gender specific. These measurements are referred to as "BMI-for-age" and are plotted on gender-specific growth charts. BMI-for-age enables changes in growth to be tracked over time and can be used continuously from 2 years of age to adulthood. BMI-for-age is reported as a percentile, above or below which a given proportion of the group being measured falls. For example, if a child's BMI is in the 85th percentile, 84.9% of other children's BMI measurements are lower.<sup>2</sup>

#### BMI Classifications for Children

Classification	BMI- for-Age Percentile
Underweight	< 5th
Normal weight	>5th and <85th
Overweight	>85th and <95th
Obese	> 95th

It is very difficult to visually distinguish children who are overweight from children who are at normal weight. For instance, Figure 1 (next page) shows an obese child (95th percentile), Figure 2 shows an overweight child (94th percentile) and Figure 3 shows a child at normal weight (10th percentile).

### Fast Facts

- An estimated 17% of U.S. children and adolescents ages 2-19 years are overweight.
- Body Mass Index (BMI) is a useful screening tool for determining youth overweight.

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The Muskie School Physical Activity and Nutrition Team is a group of professionals that researches and provides technical assistance in areas of nutrition and physical activity.



Figure 1

Figure 2

Figure 3

### BMI Screening in U.S. Schools

A number of states have passed legislation that requires schools to collect BMI surveillance data as part of a greater health assessment of students. These states include but are not limited to Arkansas, Pennsylvania, Florida, Tennessee and West Virginia. The BMI data are reported to state agencies and used for population surveillance.

Additionally, the results of each student's growth screening are distributed to parents in the form of a health report. The report contains recommendations to share BMI findings with a student's health care provider when appropriate. Many schools provide health screenings such as hearing, vision and scoliosis. Some states do not require schools to include BMI as part of these health screenings. However, a number of states are using BMI as a growth-screening tool.

### Considerations for Measuring BMI in School Settings

BMI-for-age is only one factor to consider when conducting a health screening. Children and adolescent's bodies change as they move through their growth process. The percentile based BMI-for-age measurement takes these changes into account; therefore, a child's growth can be monitored over time. Tracking BMI-for-age can be used to identify changes in growth that may indicate an underlying problem or call for some kind of intervention. However, it is important to note that using BMI-for-age as a diagnostic tool rather than a screening tool for determining youth overweight may result in children being improperly classified as overweight or obese.<sup>3</sup> To determine whether a child has excess fat, further medical assessment is needed.

In addition, schools must consider the social and emotional stigma attached to overweight. Care must be taken to protect the privacy of the student, and if reporting BMI

data to parents, a thorough explanation of the screening tool as well as follow-up resources and referrals should be included in the report.

### Policy Implications

When appropriate systems are in place to protect the children from a negative experience, schools have an opportunity to assist families with early detection of weight-related health risks. When using BMI as a screening tool for children in schools, policies must be developed to ensure a multi-faceted approach is used that includes clear and respectful communication of results with parents, safeguards to protect students' privacy, and follow-up that links families to appropriate resources.

With formal policies in place that prevent stigmatizing students, positive changes are more likely to occur. When schools implement sound policies and demonstrate positive experiences regarding BMI screening and a commitment to follow-through, they can become models for state-level legislative changes that can improve the overall health of youth.

Individuals can assist in this process by getting involved in local PTO's, school boards, and talking with superintendents and principals. It will take the combined efforts of schools, families, physicians, communities, government agencies, health providers, and the media to make significant progress toward understanding the effectiveness that BMI screening has on weight.

### References

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