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# Why Should Schools be Concerned about Body Mass Index? Because It's a Piece of the Puzzle!

By Beth Bahn, RN, CSN, CRNP, Pennsylvania

Screening children in school for Body Mass Index (BMI) and BMI-for-age percentiles is just one piece of the puzzle when looking at the problem of childhood obesity. The National Conference of State Legislatures reported that 15 states considered BMI legislation during 2005. Pennsylvania was able to modify its growth screening program based on existing regulations so that BMI screenings became mandatory in the 2005-2006 school year.

## Q: How big is the problem?

A: According to a 2005 report by the Robert Wood Johnson Foundation and American Heart Association, 16% of all children and teens in the United States are overweight. The Centers for Disease Control and Prevention (CDC) reported that when comparing the years 1976-1980 to the years 1999-2002, the prevalence of overweight children in the United States had nearly doubled (Center for Health and Health Care in Schools, 2005). A 2003 report from the Youth Risk Behavior Survey (YRBS) showed that 27% of high school students were at risk for or were overweight and estimated that 70% of those students would become overweight or obese as adults (CDC, 2006). Because recent research suggests that childhood obesity could cut a child's lifespan, this could be the first generation of children in American history that will not outlive their parents (Robert Woods Johnson, 2005).

## Q: What is BMI?

A: Body Mass Index is a *screening tool* that uses the height, weight, age, and sex of a student to determine whether a student's weight is appropriate in relation to his/her height. The CDC breaks BMI-for-age percentiles into several categories:

- BMI less than the 5th percentile is considered underweight;
  - Percentiles between 85th and 95th are at-risk for or are overweight; and
  - Greater than or equal to the 95th percentile are overweight or obese.
- According to the CDC, BMI screening is considered an inexpensive and easy-to-perform method of screening to identify students who may be at increased risk for future health problems (CDC, 2006).

## Q: Is BMI screening an accurate predictive measure?

A: Like all screening tools, BMI can produce some false positives or negatives. For example, a student may have an artificially high BMI due to a high level of lean body tissue or muscle, which can be found in well-conditioned athletes or dancers. It is so important for parents to share BMI's and BMI percentiles with their primary care provider so all factors, such as activity level, muscle mass, etc., can be taken into consideration (Pennsylvania Department of Health, 2004).

## Q: What health problems are associated with higher BMI's?

A: The Center for Health and Health Care in Schools (2005) has identified BMI-for-age percentiles in the overweight category as a major risk factor for type 2 diabetes, cardiovascular disease, hypertension, osteoporosis, asthma, and an increased risk for liver and gallbladder diseases. In fact, the categories of diabetes were changed from adult-onset to type 2 because of the increasing numbers of this type of diabetes in children. This study indicated that 60% of children, 5 to 10 years of age, with BMI-for-age percentiles > 95 already had at least one risk factor for cardiovascular disease, such as elevated total cholesterol, triglycerides, insulin, or blood pressure. Even more alarming is that 25% of these children had two or more risk factors.

## Q: How important is it to notify *all* parents of growth screening results?

A: Notifying all parents of screening results is just as important as providing prescreening education to all parents. Tracking these results over time will help parents and primary care providers identify significant decreases or increases in BMI-for-age percentiles before the changes become obvious by looking at the child. Research by Skybo and Ryan-Wenger (2003) showed that only half of all parents of overweight children perceived their child as being overweight. Early identification should lead to earlier intervention through healthy food choices and increased physical activity.

## Q: What is the history of BMI screening in Pennsylvania?

**A:** Following the introduction of CDC's new growth charts for BMI and BMI-for-age percentiles in 2000, the Pennsylvania Department of Health surveyed the student health records of over 25,000 8th graders. This survey, conducted during the 2001-2002 school year, indicated that 18% of the students were overweight and 17% were at risk of being overweight—above the national average. In early 2003, the Pennsylvania Department of Health unveiled the *Pennsylvania Nutrition and Physical Activity Plan to Prevent Obesity and Related Chronic Diseases*. One of the goals of this plan was to increase parent/guardian awareness of the BMI-for-age measure as a screening tool to assess growth patterns in children and youth.

The Division of School Health, in collaboration with the Bureau of Chronic Diseases and Injury Prevention, drafted procedures to add BMI to the growth screenings for children in Pennsylvania schools. In September of 2003, 10 schools agreed to pilot the modified procedures. Approximately 4,400 students were screened with 17.33% in the at-risk for overweight category and 21.03% in the overweight category. The modified Growth Screening Program was voluntarily implemented for the 2004-2005 school year by 79 schools. Of the 234,328 students screened, 13% were in the at-risk for overweight category and 19% in the overweight category.

#### **Q: What are the other pieces of the puzzle?**

**A:** (1) The passage of the Child Nutrition and WIC Reauthorization Act of 2004 (Public Law 108-265), requires all school entities receiving federal money for their lunch and breakfast programs to develop wellness policies prior to the 2006-2007 school year. Several components are required as a part of this policy: nutrition education; physical activity; food provided on school camps; and other school-based activities designed to promote student wellness. BMI statistics are a helpful tool for school districts as they prepare to write their wellness policies. Pennsylvania schools are using the BMI data to foster discussion on better food choices and to encourage increased physical activity within the school and community.

(2) The Pennsylvania Nutrition and Physical Activity Plan to Prevent Obesity and Related Chronic Diseases included the establishment of an organization called Pennsylvania Advocates for Nutrition and Activity (PANA). The mission of PANA is to build a state-wide capacity for developing an environment to promote active lifestyles and healthy food choices. In order to facilitate Pennsylvania's modified Growth Screening Program and the drafting of wellness policies, PANA has developed several toolkits. The toolkits can be found on their website at [www.panaonline.org](http://www.panaonline.org).

(3) According to the National Conference of State Legislatures, during the 2005 year, at least 29 states have considered legislation related to nutritional quality of school foods and beverages. During the same year, at least 39 states considered legislation, and at least 21 enacted legislation or passed resolutions related to physical activity or physical education in schools.

Reading in the media that children might not outlive their parents or hearing that the numbers of "adult" diseases being diagnosed in our children is skyrocketing, there should be no surprise that childhood obesity is the fastest rising public health issue in our nation. According to former Surgeon General Jocelyn Elders, "You can't educate a child who isn't healthy, and you can't keep a child healthy who isn't educated." School health services are a key ingredient in a complete recipe for promoting healthy living for all students. Through education, referrals, follow-up, and, perhaps most importantly, your support, school nurses influence the health and well-being of students under their care. The pieces of the puzzle are coming together.

*For more information on this topic, please contact your State School Nurse Consultant. Please visit the National Association of State School Nurse Consultants' website at [www.nassnc.org](http://www.nassnc.org).*

#### **REFERENCES**

- Centers for Disease Control and Prevention. (2006). Overweight among students in grades K-12—Arkansas, 2003-04 and 2004-05 school years. *Morbidity and Mortality Weekly Report*, 55(01), 5–8.
- Centers for Disease Control and Prevention. (2006). *BMI—Body mass index: About BMI for children and teens*. Retrieved May 15, 2006 from the World Wide Web: [http://www.cdc.gov/ncdphp/dnpa/bmi/childrens\\_BMI/about\\_childrens\\_BMI.htm](http://www.cdc.gov/ncdphp/dnpa/bmi/childrens_BMI/about_childrens_BMI.htm)
- Centers for Health and Health Care in Schools. (2005). *Childhood overweight: What the research tells us*. Retrieved April 6, 2006 from the World Wide Web: <http://www.healthinschools.org>
- National Conference of State Legislatures. (2005). *Childhood obesity—2005 update and overview of policy options*. Retrieved April 6, 2006 from the World Wide Web: <http://www.ncsl.org/programs/health/ChildhoodObesity-2005.htm>
- PA Department of Health. (2004). *Procedures for the growth screening program for Pennsylvania's school-age population*. Retrieved April 6, 2006 from the World Wide Web: <http://www.health.state.pa.us/schoolhealth>
- Robert Wood Johnson Foundation and American Heart Association. (2005). *A nation at risk: Obesity in the United States*. A statistical sourcebook. Dallas, Texas: American Heart Association.
- Skybo, T., & Ryan-Wenger, N. (2003). Measures of overweight status in school-age children. *Journal of School Nursing* 19(1), 172–180.
- Wilsdon, L. (2005). *Former surgeon general speaks about health care*. Retrieved April 6, 2006 from the World Wide Web: <http://www.easternecho.com/cgi-bin/story/cgi?11180>