THE STATE OF NUTRITION AND PHYSICAL ACTIVITY IN OUR SCHOOLS

A STUDY OF NUTRITION AND PHYSICAL EDUCATION IN SCHOOLS, PROMPTED BY RISING RATES OF CHILDHOOD OBESITY
Introduction

In 1998, the World Health Organization determined obesity to be a global epidemic. This epidemic affects not only adults, but also children and adolescents worldwide. In the United States, obesity and overweight prevalence is estimated to be at least 15 percent for all children and adolescents, and higher than 30 percent in some population subgroups. Obesity is now the most serious dietary problem affecting the health of American children.

The most extensive data on obesity and overweight prevalence are provided by the National Health and Nutrition Examination Survey (NHANES). As part of a comprehensive set of body measurements, this survey records height and weight, and reports results in terms of body mass index (BMI), expressed as weight/height\(^2\) (kg/m\(^2\)). While defining childhood obesity is problematic due to a lack of a standard definition and vocabulary, it is generally accepted that a child whose BMI is above the 95th percentile for his or her gender and age is overweight or obese.

Results from the NHANES survey are reported approximately every five years. Figure 1 shows the trend in overweight prevalence for children and adolescents for selected years from 1963 through 2000. While overweight prevalence was relatively stable from the 1960s through the 1980s, this figure shows a marked increase from the late 1970s to 2000. In fact, overweight prevalence doubled for children aged 6–11 years and tripled for adolescents aged 12–19 years. A further disturbing trend is that the distribution curve of children's weight has become skewed to the right over time, indicating that children who are already overweight are getting fatter.
Disparities in prevalence

Between 1976 and 1994, overweight and obesity prevalence increased in both genders, across all races and ethnicities, and across all age groups.\textsuperscript{9, 10} However, disparities in overweight and obesity prevalence do exist based on race, ethnicity, gender, and socioeconomic status.

Data from the N\textit{HANES} III survey, collected from 1988-1994, demonstrated that Mexican-American boys had a higher prevalence of overweight than did non-Hispanic black and non-Hispanic white boys.\textsuperscript{11, 12} In addition, Hispanic girls and non-Hispanic black girls have shown a higher prevalence of overweight than non-Hispanic white girls.\textsuperscript{13, 14, 15, 16}
The State of Nutrition and Physical Activity in Our Schools

What is childhood obesity, and how does it differ from childhood overweight?

Childhood obesity is defined as the presence of excess adipose tissue, while childhood overweight simply means having too much weight. The BMI described earlier is currently the preferred method for evaluating weight status in children, and a BMI greater than the gender- and age-specific 95th percentile is strongly indicative of obesity in children and adolescents.

It should be noted that only criteria based on measures of fatness or adiposity can classify individuals as obese. Weight-based measures, including the BMI, are only indirect measures of adiposity. This is particularly relevant in populations of children who are growing and developing muscle, and may vary widely even within the same age and gender groupings. Thus, the NHANES survey described previously makes no reference to childhood obesity, and confines its results to childhood overweight prevalence.

However, other researchers have argued that the association between obesity and high BMI is quite strong, and in a majority of studies, a BMI greater than the 95th percentile is considered obese. Regardless of difficulties in precisely defining childhood obesity, it is clear that millions of American children are overweight or obese, and that this problem is increasing at an alarming rate.
What health problems are associated with childhood obesity?

Childhood obesity can lead to a startling variety of negative health effects, both acute and long-term. Prior to adulthood, obese children may develop gallstones, hepatitis, and sleep apnea. Obese children and adolescents also have increased risks of childhood hypertension and high cholesterol. Because they carry excess weight, obese children are at increased risk of orthopedic problems. They are also prone to psychosocial disorders. Discrimination is common, and overweight children are ranked the lowest of those with whom other children would like to be friends.

One of the most alarming health outcomes associated with the growing prevalence of childhood obesity is the increase in Type 2 diabetes in children. This type of diabetes has been traditionally termed “adult-onset diabetes” because, historically, the overwhelming majority of cases have been found among adults. Until recently, only 1-2 percent of children were diagnosed with Type 2 diabetes. Now, however, reports indicate a steep increase in incidence of this disease.

One large study in Cincinnati found a 10-fold increase in Type 2 diabetes in adolescents between 1982 and 1994. This increase is strongly linked to childhood obesity, as 85 percent of children with Type 2 diabetes are either overweight or obese at diagnosis. Overweight and obese children are more likely...
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An overabundance of food, much of which is high in fat and sugar, coupled with sedentary lifestyles, is driving these rising obesity rates. In 1997, American children obtained 50 percent of their calories from added fat and sugar, and only 1 percent regularly ate diets that resembled the USDA's dietary guidelines.

A study by the Centers for Disease Control and Prevention (CDC) found that 64 percent of young people ages 6 to 17 eat too much total fat, and 68 percent eat too much saturated fat. According to another national survey, less than 50 percent of children participate in any physical activity that would promote long-term health benefits.

What are the factors involved in childhood obesity?

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What is the role of the school in childhood obesity prevention?

The school environment has a powerful influence on students’ eating behaviors, and the Surgeon General has identified schools as key settings for public health strategies to prevent and/or decrease the prevalence of overweight and obesity. Children spend a large portion of their time at school, and many of the lifestyle and behavior choices associated with obesity develop during this time. Researchers have concluded that schools can help prevent childhood obesity by providing appropriate meals, physical activity, and health education.

In addition, research has shown that the influence of the school environment on behavior extends beyond the school. Students are exposed to food throughout the school day, and this repeated exposure is likely to influence food selection outside of school, as well.

A study of the association between adolescents’ dietary behavior and food sales at school found that students choosing less healthful foods at school do not compensate by choosing more healthful foods at other times. Research has also shown that increased focus on physical education in school can lead to overall increases in the amount of time students spend engaged in vigorous physical activity.

This study evaluates the nutrition and physical activity environments in a cross-section of public schools.