

Childhood Obesity and Nutrition Issues in the United States: An Update on School-based Policies and Practices

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UPCOMING POLICY BRIEFS . .

- ✓ *The Evolution of Indiana's School Accountability System*
- ✓ *Trends in Virtual Learning in the U.S.*
- ✓ *Quantifying the Impact of Chronic Absenteeism in Indiana's K-12 Public Schools*

INTRODUCTION

Since the Center for Evaluation & Education Policy's (CEEP) policy brief, *Child Obesity in Indiana: A Growing Public Policy Concern*, was published in 2005, rising obesity rates in the United States have continued to generate headlines and spark extensive public discourse (Cline, Plucker, & Spradlin, 2005). Obesity is not just a personal matter — it is also a public health epidemic that affects education achievement outcomes, economic productivity, and state budgets.

Within the last 20 years, obesity rates among all groups in society — irrespective of age, sex, race, socioeconomic status, education level, or geographic region — have noticeably increased (Centers for Disease Control and Prevention [CDC], 2009). Some health officials are now referring to childhood obesity as a pandemic. According to the World Health Organization's (WHO) most recent data, the United States has the sixth highest percentage of overweight adults compared to other countries with available BMI (body mass index) data (WHO, n.d.). Today, more than one third of American adults (over 72 million people) are considered obese (CDC, 2009). Within the past 50 years, the obesity rates for Americans have nearly tripled, growing from 13.4% in 1960 to 35.1% in 2006. As a result, there are currently more Americans who are obese than are merely overweight (see Figure 1).

In 2008, 23 states saw a significant increase in obesity, but not a single state had a significant decrease. Although the U.S. Department of Health and Human Services (HHS) set a national goal under the Healthy People initiative in 2000 to reduce adult obesity rates to 15% in every state by

2010, all states and Washington, D.C. had obesity rates in 2010 that far exceeded 15% (Robert Wood Johnson Foundation [RWJF], 2009; U.S. Department of Health and Human Services, 2010).

America's obesity problem has a significant impact on children and adolescents. Since the 1960s, obesity rates in the U.S. have more than quadrupled among children ages 6 to 11, more than tripled among adolescents ages 12 to 19, and more than doubled among children ages 2 to 5 (Koplan, Liverman, & Kraak, 2007). Today, nearly 23 million U.S. children and teens are either overweight or obese (see Figure 2) (Ogden, Carroll, & Flegal, 2008). Preventing obesity during childhood is of critical importance because habits formed during childhood and adolescence usually persist into adulthood, making overweight children and adolescents more likely to become overweight adults (Story, n.d.).

This Education Policy Brief will examine the latest research and statistics regarding childhood obesity. In addition to providing an overview of current trends and effects of childhood obesity, this brief considers the reasons for the increase in obesity rates among children, as well as the latest federal and state initiatives created to combat childhood obesity. In particular, the brief highlights the significance of the Healthy, Hunger-Free Kids Act of 2010, the "Let's Move" campaign, and recent soda tax initiatives. The brief also considers local policies addressing obesity, providing a summary of 41 wellness policies collected from school districts throughout Indiana. Finally, we offer conclusions and recommendations to schools and education leaders, policymakers, and parents about how to curb the obesity epidemic.

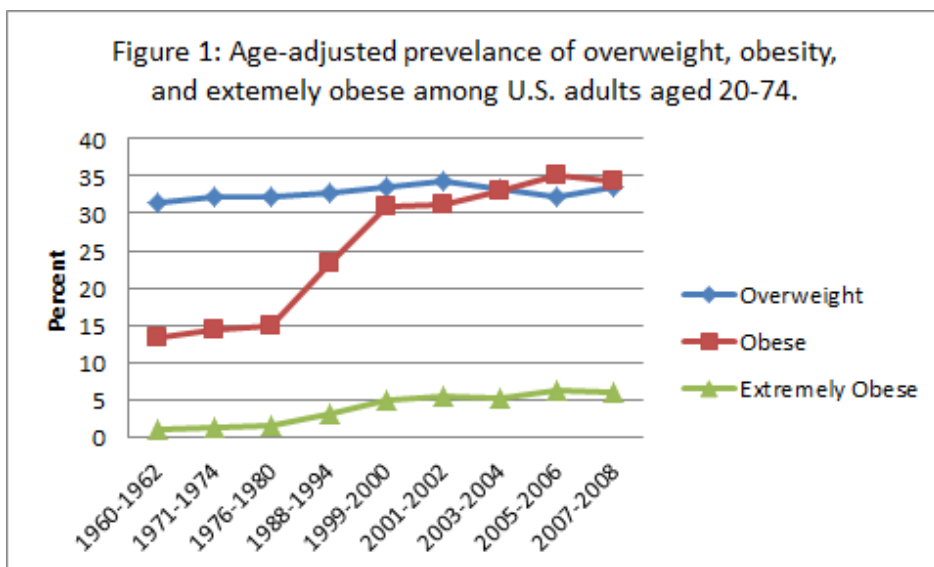
OBESITY TRENDS AND COSTS

According to a 2011 report published by the Trust for America's Health and the Robert Wood Johnson Foundation, Indiana has the 15th highest percentage of obese adults, an increase from its 16th place ranking in 2009. An alarming trend for Indiana is the percentage of obese and overweight children, now 27th in the nation and surpassing four other states since 2009 (RWJF, 2011). In 2010, Indiana had a higher percentage of overweight adults than any of its neighboring states (see Figure 3). Furthermore, approximately 220,000 of 667,000 Indiana children ages 10-17 years (32.9%) are considered overweight or obese according to BMI-for-age standards (Childhood Obesity Action Network [COAN], n.d.).

Obesity is not just a disease that puts people at risk of further health concerns, it is also expensive. Obese people spend on average 42% more on health care than their healthy-weight counterparts (Finkelstein, Trogon, Cohen, & Dietz, 2009). According to researchers, the medical costs of obesity were estimated at approximately \$78.5 billion nationwide in 1998, with roughly half of those expenses financed by Medicare and Medicaid. In 2000, total costs reached \$117 billion (CDC, 2009). By 2008, obesity-related health expenses had nearly doubled from the previous decade, reaching \$147 billion a year, or nearly 10% of all yearly medical expenditures (Finkelstein et al., 2009). Another researcher predicts that in 2018, the U.S. will spend approximately \$344 billion on health care costs attributable to obesity if the rates continue to increase at their current levels (Thorpe, 2009). In Indiana, the 2008 health care spending on obesity-related illnesses amounted to \$1.9 billion (Indiana State Department of Health, 2011).

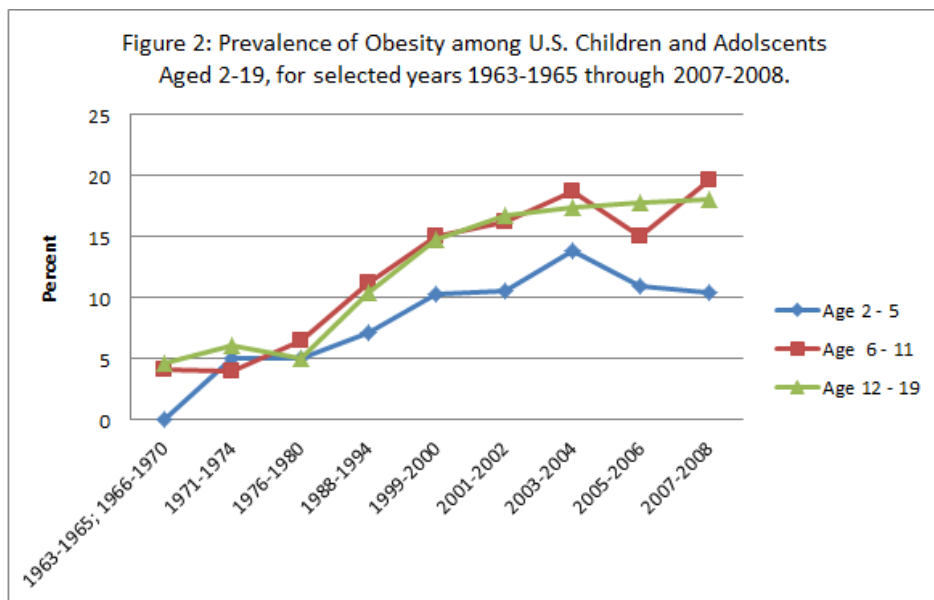
The economic consequences of childhood obesity are extremely high. Nationally, the direct costs for overweight or obese children ages 6 to 19 totaled \$14.1 billion between 2002 and 2005 (Trasand & Chatterjee, 2009). The costs included annual prescription drugs, emergency room visits, and outpatient visits. It is estimated that the yearly average total health expenses for a child treated for obesity are more than three times that of the average child (Marder & Chang, 2006). Research shows that an adult who is obese spends about

Figure 1. Age-adjusted prevalence of overweight, obesity, and extreme obese among U.S. adults aged 20-74



Source: CDC, 2010c.

Figure 2. Prevalence of Obesity among U.S. Children and Adolescents Aged 2-19, for selected years 1963-1965 through 2007-2008

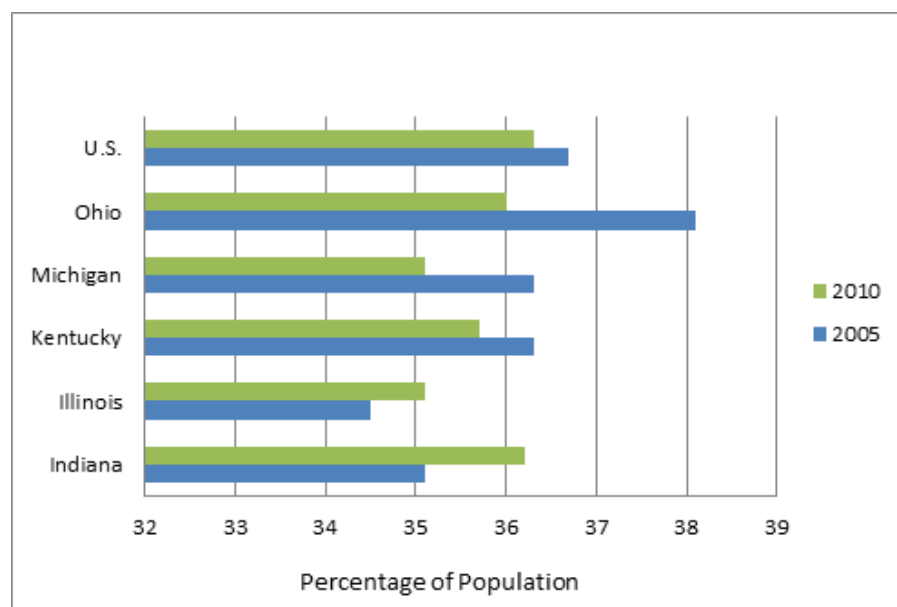


Source: National Center for Health Statistics (2009).

* Data for first time period (1963-70) are from 1963-65 only for children ages 6-11 years and from 1966-70 only for adolescents ages 12-18 years.

\$1,429 (or 42%) more per year on medical expenses, primarily for prescription drugs to treat obesity-related illnesses, than someone who is of normal weight (Finkelstein et al., 2009).

Figure 3. Percentage of Overweight Adults in Indiana and Surrounding States.



Source: CDC, 2010b.

THE EFFECTS OF CHILDHOOD OBESITY

The consequences of excess weight are both numerous and significant. Obesity is associated with an increased risk of heart disease, stroke, diabetes, some cancers, hypertension, osteoarthritis, gallbladder disease, and disability. In children and adolescents, being overweight increases the risk of hypertension, high cholesterol, orthopedic disorders, sleep apnea, diabetes, low self-esteem, and becoming an overweight adult (National Center for Health Statistics, 2009). Children treated for obesity are also at a higher risk for mental health and bone and joint disorders than are their non-obese peers (Marder & Chang, 2006).

In children, being obese or overweight has been conclusively linked to decreased attendance and academic achievement. A recent CDC review of 50 studies determined that physical activity increases students' academic performance in areas such as grades and standardized test scores (CDC, 2010a). Another study concluded that decreased academic achievement could be tied to the increased school absenteeism rate of obese children and adolescents. In the study, obese children and adolescents missed a mean of 4.2 days of school a year compared to a mean of 1.7 for

healthy children and adolescents. Though the reasons for absenteeism were not investigated, the researchers pointed out that missed school days may subsequently lead to poor school performance (Schwimmer, Burwinkle, & Varnie, 2003).

Children's health and ability to learn in school are strongly correlated. Poor nutritional status has been proven to interfere with cognitive function and is often associated with low academic performance. The school environment can be a powerful catalyst in decreasing the prevalence of obesity and overweight youth. Schools offering a comprehensive approach to combating obesity are most effective. Healthy school breakfast and lunch programs and ensuring physical education (PE) as part of the curriculum have been shown to improve educational attainment when employed collectively (Basch, 2010). Conversely, extraordinarily low levels of physical activity among youth significantly increase the likelihood of children becoming overweight and obese (Gordon-Larsen, Adair, Nelson, & Popkin, 2004; Kimm et al., 2001, 2002; Ogden, Carroll, & Flegal, 2006; Ogden, Flegal, Carroll, & Johnson, 2002). Research further suggests that schools offering physical education programs not only reduce obesity but also increase students' attendance (Geier et al., 2007; Shore et al., 2008).

A DECLINE IN PHYSICAL EDUCATION

Numerous experts have indicated that physical activity in schools is vital for the well-being of children. It helps combat obesity and teaches habits that promote healthy lifestyles. Recent studies have demonstrated that integrating even a simple physical activity such as walking into the curriculum improves children's ability to pay attention in the classroom and results in better performance on academic achievement tests (Hillman, 2009). Another study showed that adolescents who reported either participating in school activities, such as physical education and team sports, or playing sports with their parents were 20% more likely than their sedentary peers to earn an "A" in math or English (Nelson & Gordon-Larsen, 2006).

Beyond academic achievement, studies suggest that physical activity directly benefits cognition. In one study, in which children jogged for about 30 minutes two to four times per week, researchers measured a significant increase in activity in the prefrontal cortex, suggesting greater cognitive function. However, the cognitive gains were only sustained while children maintained the jogging regimen (Harada, Okagawa, & Kubota, 2004). The cognitive gains from increased physical activity can be seen in students of all ages and of varied physical and cognitive abilities, including children with special needs and/or learning disabilities (Sibley & Etnier, 2003). Additional benefits of physical activity include increased self-esteem, which may influence positive academic achievement and better classroom behavior (Tremblay, Inman, & Willms, 2000).

Despite the demonstrated benefits of physical activity, studies show that most youth do not meet physical activity guidelines, which recommend an hour or more of moderate-to-vigorous physical activity a day (CDC, 2003, 2008). Moreover, recent budgetary constraints and increasing pressure to improve standardized test scores in core subject areas have caused school officials to substantially reduce the time available for physical education. In some schools, PE programs have been completely eliminated (NASPE & AHA, 2006). A 2007 study found that in a nationally representative survey of 349 school

districts, 62% of elementary schools and more than 20% of middle schools reported increased time for English/language arts (E/LA) and math since the 2001-02 school year (when No Child Left Behind was enacted). However, to accommodate for this increased time in E/LA and math, 44% of districts reported cutting time from one or more other subjects or activities such as social studies, science, art, music, physical education, or recess at the elementary level. The decrease was a 32% reduction on average in the total instructional time devoted to these subjects since 2001-02 (McMurrer, 2007).

Because there are no federal laws requiring schools to offer physical education, many states have delegated responsibility for educational decisions regarding physical activity to the local school district or have imposed direct mandates. Currently, 43 states mandate PE for elementary school students, 40 states mandate PE for middle students, and 46 states mandate PE for high school students (NASPE, 2010).

In Indiana, there is no state mandate for physical education in elementary or middle school. Students are required to take PE as a part of a balanced curriculum, but there is no year or grade specified. Although a mandate for high school physical education exists as a graduation requirement, it does not specify the grade or the year of participation in physical education during a student's high school tenure. In 2005, the Indiana Department of Education (IDOE) changed the number of credits awarded to students for taking a physical education course. Beginning with students who entered high school in fall 2006, students received one credit each semester instead of one-half credit per semester. This change, however, did not necessarily increase student participation in physical education courses. In 2009, the IDOE made changes allowing schools to award PE credits based on a demonstration of proficiency against the Academic Standards for Physical Education through student participation in "a variety of experiences, including those outside of the classroom" (Zaring, 2009). In many states, including Indiana, these experiences have included varsity sports, cheerleading, and even band.

THE SCHOOL FOOD ENVIRONMENT

School Lunches

In 1946, the National School Lunch Program (NSLP) was signed into law by President Harry S. Truman with the goal of absorbing farm surpluses while simultaneously guaranteeing a hot meal to all school-age children. Over the past 60 years the NSLP has helped combat childhood hunger and improve childhood nutrition, with more than 31 million children benefiting from the program in Fiscal Year 2010 (United States Department of Agriculture [USDA], n.d.). Recently, however, concerns have been raised about the program's ability to meet its original goal, especially as obesity has eclipsed malnutrition as the central childhood nutrition problem.

...students who eat lunches served by their schools are more likely to be overweight or obese compared to children who bring their lunches from home.

Put in place in the mid-1990s, the USDA School Meals Initiative for Healthy Children (SMI) aimed to align school meals with the Dietary Guidelines for Americans by increasing levels of whole grains, fresh fruit, and fresh vegetables, and reducing levels of fat, saturated fat, sodium, and sugar in school meals. SMI standards also required schools to offer meals that provide no more than 30% of total calories from fat and less than 10% from saturated fat, while providing adequate levels of target nutrients. The SMI is especially important since research has shown that children are eating less fruit and consuming more beverages such as fruit drinks, sport drinks, and fruit juice (Piernas & Popkin, 2010).

In November 2007, the USDA released the School Nutrition Dietary Assessment Study-III, which compared nutrients in school lunches to the SMI standards. At the time of the study, only 21% of schools served lunches that met the total fat standard, only 30% of schools served lunches that met the saturated fat standard, only 6 to 7% of schools served lunches that met all of the SMI standards, and virtually no schools serve lunches that met the sodium benchmark (Gordon et al., 2007).

More recently, a study released in 2009 by the University of Michigan Cardiovascular Center found that students who eat lunches served by their schools are more likely to be overweight or obese compared to children who bring their lunches from home. Not only were school-fed children more than twice as likely to consume fatty meats (25.8% versus 11.4%) and sugary drinks (36% versus 14.5%), but they also consumed fewer fruits and vegetables (16.3% versus 91.2%) (American College of Cardiology, 2010).

Though the U.S. Department of Agriculture provides \$1 billion to the NSLP for more than 180 different commodities, including meats, cheeses, rice, pasta, produce, and legumes, school districts nationally spent roughly 72% of the commodity funds on meat and cheese items, which are both relatively high in fats and saturated fats. In addition, more than 50% of commodity foods are sent to processors before they are delivered to schools. Because processing is not regulated for nutritional quality and often involves adding fat, sugar, and sodium to the products (such as making chicken into chicken nuggets), many of the "healthier" commodities become foods of minimal nutritional value before reaching students (RWJF, 2008).

Competitive Foods

Though school lunches are subject to federal standards, competitive foods (foods and beverages sold outside of the USDA's school meal program) have not faced the same oversight. Often sold in vending machines, snack bars, and à la carte lines in schools, competitive foods are a valued source of revenue for many schools. Nationwide, nearly one in five elementary schools, one third of all middle schools, and half of all high schools have a school store,

canteen, or snack bar where students can purchase food or beverages. Vending machines were also present in 21% of elementary schools, 62% of middle schools, and 86% of high schools (Larson & Story, 2010). Students who consumed competitive food items often reduced their school lunch servings. Because the competitive foods sold are rarely nutritious, this can result in lower intakes of vitamins and minerals and higher intakes of calories and fat (Story, Kaphingst, & French, 2006). Kubik et al. found that the greater the availability of à la carte foods at lunch, the lower the daily intake of fruits and vegetables, and the higher the intake of daily total fat and saturated fat. Similarly, the greater the availability of snack vending machines, the lower the students' intake of fruit (Kubik, Lytle, Hannan, Pery, & Story, 2003).

Though such studies highlight the importance of restricting competitive foods in schools, federal regulations have only restricted a small subset of competitive foods in schools by prohibiting the sale of foods of minimal nutritional value (FMNV) in the food service areas during mealtimes. However, the Healthy, Hunger-Free Kids Act of 2010 (discussed fully on page 6) provides the U.S. Department of Agriculture (USDA) with the authority to set new nutrition standards for all foods served in schools, including vending machines. Because FMNVs have been defined as foods providing less than 5% of the recommended intakes for eight key nutrients, only some competitive foods, like soda, gum, hard candies, and jelly beans have been restricted. Other competitive foods, such as candy bars, chips, and ice cream, have not been considered FMNVs and may be sold in the cafeteria during meal periods until the USDA issues guidelines or rules stating otherwise (U.S. General Accounting Office, 2004).

Some states, including Indiana, have created restrictions on the use of vending machines and FMNVs. In 2007, a study conducted by the Center for Science in the Public Interest (CSPI) found that only 12 states have “comprehensive school food and beverage nutrition standards that apply to the whole campus and whole school day at all grade levels” (CSPI, 2007). In Indiana, Senate Bill 111 was passed to require that 50% of all competitive foods sold to students during the school day must qualify as “better choice” foods or beverages.

Signed into law in 2006, the bill (referred to as Public Law 54) was a positive step toward regulating the nutritional qualities of competitive foods, but it is still very limited in its effects, as only 50% of all competitive foods are required to be “better choice” foods (see Table 1).

The School Breakfast Program

Originally begun as a pilot project in 1966 and made permanent by Congress in 1975, the School Breakfast Program (SBP) funds breakfasts for students in public or private schools. All students are eligible to participate, but as is the case with the National School Lunch Program, students who qualify under income guidelines receive breakfast for free or at a reduced price (Nutrition Consortium of New York State, n.d.).

Studies have shown that eating a daily breakfast has many positive effects and is essential to the health and well-being of children. Children who eat breakfast at school are less hungry, less likely to be tardy, and less likely to visit the school nurse. In addition, students who eat breakfast every morning also have improved nutrition and student achievement (Food Research and Action Center, 2010a). However, barriers such as hectic morning schedules, late bus schedules, not having enough time to eat before class begins, pressure to arrive at class on time, and social stigmas prevent maximum participation in the SBP (Food Research and Action Center, 2010a). As a result, despite the fact that 86% of schools across the country offer breakfast to their students, fewer than half of the low-income children who eat

lunch at school also participate in the breakfast program (U.S. Department of Agriculture, 2010).

In an attempt to address the barriers and increase participation in the SBP, various schools in New York adopted the “Breakfast After the Bell” program in its schools. By incorporating the following alternative methods, New York schools were able to give all students an opportunity to participate in the breakfast program:

- **Grab and Go:** A bagged, hand-held meal picked up in a high-traffic area such as a school lobby. This breakfast is convenient for students to eat on the go or in the classroom.
- **Breakfast on the Bus:** A pre-bagged meal provided to students when getting on the bus or served to students on the bus while waiting to enter the school. Students who have long bus rides are able to eat breakfast without being late for class.
- **Breakfast After First Period:** Ideal for high schools, breakfast service time is extended until after the first academic class. This allows students to eat a snack or incorporate a morning meal into their routines.
- **Universal Classroom Breakfast:** All students eat breakfast in the classroom during morning announcements. Meals are delivered to the classroom and all children eat, reducing the stigma that only low-income children eat breakfast at school (Nutrition Consortium of New York State, n.d.; Office of the First Lady, 2010).

Table 1. “Better Choice” Food and Beverages

“Better Choice” Beverages are:

Fruit- or vegetable-based drinks that:

- Contain at least 50% real fruit or vegetable juice; and
- Do not contain additional caloric sweeteners.

“Better Choice” Foods Meet the Following Standards:

- No more than 30% of total calories from fat.
- No more than 10% of total calories from saturated and trans fat.
- No more than 35% of product weight from sugars that do not occur naturally in fruits, vegetables, or dairy products.

Source: Indiana Code §20-26-9-19

FEDERAL AND STATE INITIATIVES TO COMBAT CHILDHOOD OBESITY

In recent years, as awareness of the risks and costs of obesity has increased, numerous initiatives to combat childhood obesity have been launched at both the state and federal levels. These programs seek to prevent and treat obesity and to further improve the health of Americans.

“Let’s Move” Campaign

In February of 2010, First Lady Michelle Obama launched a “Let’s Move” public-awareness campaign against childhood obesity. The campaign, which encompasses a wide range of initiatives aimed at ending childhood obesity within a generation, defines success as returning the country to a childhood obesity rate of 5%. Mrs. Obama, along with the White House Task Force on Childhood Obesity, released a 124-page report which outlined 70 recommendations, including:

- Standardizing all labels on packaged foods;
- Limiting the licensing of popular characters by restaurant chains to only meals containing healthy foods;
- Encouraging women to breastfeed their children as an obesity preventive;
- Recommending that pediatricians not only monitor a child’s weight but also his or her body mass index (BMI);
- Getting more children enrolled in the summer meals program, which provides balanced meals when school is out of session;
- Making sure all children are physically active;
- Increasing the availability of healthier foods in schools; and
- Eliminating “food deserts”— low-income communities that have limited access to quality, affordable, and nutritious food options beyond the ubiquitous fast-food chains and corner stores.

In addition, the committee also set out goals to measure progress. For example, the committee aims to have children eating 75% of the USDA recommended serving of fruits by 2015, 85% by 2020, and 100% by 2030.

With the help of the Health and Human Services Department, the Department of Education, the Housing and Urban Development Department, the Federal Trade Commission, the Department of Agriculture, and the White House, the First Lady and the task force noted that the agencies and the White House reserve the right to use more extreme measures such as subpoenas and new regulations in order to achieve their goals (Office of the First Lady, 2010).

Action for Healthy Kids

Billed as one of the nation’s leading non-profit organizations, Action for Healthy Kids (AFHK) was founded in 2002 to partner with schools in fighting childhood obesity and undernourishment by improving nutrition and increasing physical activity. The organization operates on both the federal and state levels, providing expertise as well as programs and volunteers to schools and school districts in all 50 states (Action for Healthy Kids, 2009).

In Indiana, the AFHK State Team’s (Indiana Action for Healthy Kids) goal is to improve the health and educational performance of children through better nutrition and physical activity in schools. In order to meet this goal, the team has outlined the following objectives:

- Award schools that are dedicated to teaching students life-long healthy habits and for making positive changes in their school health environment with the “Healthy Hoosier School Award.” Schools selected for this honor receive a monetary award and recognition. In 2010-11, 113 Indiana elementary, middle, and high schools received the Healthy Hoosier School Award (IDOE, 2011);
- Improve school children’s eating habits by increasing access to nutritious foods and beverages on school grounds while reducing access to high-calorie, low-nutrient options;
- Integrate nutrition education into the curriculum for all school children;
- Increase students’ physical activity through physical education courses; recess; and the integration of physical activity into academic classes, after-

school activities, and co-curricular fitness programs;

- Educate administrators, educators, students, and parents about the role of sound nutrition and physical activity in academic achievement;
- Locate and secure national, state, and local financial backing to provide support for the sustainability of school initiatives; and
- Provide resources for schools to empower change.

(Indiana Action for Healthy Kids, n.d.)

Healthy, Hunger-Free Kids Act of 2010

The Healthy, Hunger-Free Kids Act of 2010 commits an additional \$4.5 billion to child nutrition programs over the next 10 years and directs the USDA to set new nutrition standards for all foods served in schools, from lunchrooms to vending machines. According to Senator Blanche Lincoln (D-AR), the Act will help over 30 million children nationally who participate in the National School Lunch Program and more than 10 million children who participate in the School Breakfast Program. In general, the Bill will:

- Allocate an additional \$4.5 billion to fund school food programs over the next 10 years;
- Enforce standards through a collaborative effort with food and beverage distribution companies and public health officials;
- Provide a 6% increase in reimbursements to schools for children in need of free or low-cost lunches;
- Fund the creation and promotion of farm-to-school programs and school gardens that would provide fresh produce for school lunches (Food Research and Action Center, 2010b); and
- Automatically qualify an additional 115,000 children in school meals programs based on eligibility criteria from Medicaid data.

The Act not only addresses the institutional capacity of providing healthy school lunches, it also takes significant steps in curbing the prevalence of childhood hunger. In particular, the Act will:

- Increase the provision of after-school feeding programs nationwide;
- Lengthen the certification period of eligible children participating in the Special Supplemental Nutritional Program for Women, Infants and Children (WIC) to one year;
- Authorize grants to maintain summer food program sponsors and breakfast programs; and
- Support research into the causes and consequences of child hunger.

In addition, the Act seeks to establish healthy eating options and rigorous nutritional standards in an effort to reduce the number of obese children by:

- Offering continued support to farm-to-school meal programs;
- Increasing the availability of schools' resources and training to improve meal quality;
- Working with childcare providers to establish healthy eating and lifestyle habits in young children; and
- Involving parents, students, school officials, and the general public in the establishment and periodic review of school wellness policies.

Although the Healthy, Hunger-Free Kids Act was designed to decrease hunger while simultaneously improving nutrition among school-aged children, significant drawbacks exist. First, the Act is essentially funded by cutting \$2.2 billion of funds from the Supplemental Nutrition Assistance Program (SNAP). Best known for its Food Stamp Program, SNAP seeks to provide hungry people, not just school children, with increased access to affordable food. According to researchers, passage of the Act means that a family of four will lose nearly \$60 a month in food stamp benefits beginning in November of 2013 (Fisher & Zaebest, 2010).

Some opponents also argue that the Healthy, Hunger-Free Kids Act cedes too much authority to the federal government. In particular, the Bill authorizes the Secretary of Agriculture to establish nutritional standards for meals available at childcare agencies and schools. The Secretary of Agriculture, Tom Vilsack, is now granted the authority to decide what constitutes proper and nutritious meals for the nation's youth.

Soda Taxes

Sugar-sweetened beverages, such as soda, sweetened tea, or fruit punch, have consistently been shown to be associated with a poor diet and to be one of the main causes for the increasing rates of obesity and diabetes. It is estimated that sugar-sweetened beverages make up nearly 11% of children's total caloric consumption (Wang, Bleich, & Gortmaker, 2008). As a result, some states have launched efforts to limit sodas and other sweetened beverages in schools. With the implementation of Public Law 54 (Senate Enrolled Act 111) in 2006, Indiana became one of the first states in the nation to do so. A 2011 study funded by the National Institutes of Health and the Robert Wood Johnson Foundation demonstrates, however, that limits and bans on sodas and sweetened beverages in schools do not decrease students' total daily consumption of such drinks, which are widely available to them outside of school (Taber, 2011). As a result, some researchers have backed initiatives such as soft drink taxes, which target soda and sweetened beverage consumption outside of school.

A policy brief by the Rudd Center for Food Policy and Obesity contends that a 10% increase in the price of soda would decrease consumption by 10% (Rudd Center for Food Policy and Obesity, 2009). A 2010 survey found, however, that current taxes are too low to make a visible impact on consumption (University of Chicago, 2010). Furthermore, in many cases, consumers do not know they exist. In 2011, a total of 37 states had imposed a sales tax on at least some soda purchases. In some of these states (including Indiana), the tax is simply a part of the sales tax that applies to food; in others, it is a separate or higher tax. In states like Michigan and Arizona, soft drinks, like other foods, are not subject to a sales tax. Currently, Indiana, which imposes a 7% sales tax on all soft drinks sold, has one of the highest soda taxes in the nation, second only to California's rate (see Table 2).

In 2011, 19 states established or raised their soda tax rates. Of these, 11 had not taxed soda previously. This increase is significant. Moreover, many states have proposed far more aggressive taxes. In 2011, 10 states proposed new soda taxes of one cent

or more an ounce. A report from the Tax Foundation notes that this could result in a tax of as much as 136% on some beverages (Drenkard, 2011).

Opponents of the tax maintain that the taxes are often too small to affect consumption, as a few recent studies found that higher soda taxes are very weakly associated with adolescent and adult weight levels (Brownell et al., 2009; Chriqui, Eidson, Bates, Kowalczyk, & Chaloupka, 2007).

Yet, advocates of soda taxes argue that there are practical reasons why most states have implemented sales taxes on soft drinks. Carbonated soft drinks and sugar-sweetened beverages are much more easily defined than other categories of snack items, which makes it easier to apply and charge such taxes. Furthermore, youth have increased their consumption of calories from sugar-sweetened beverages continuously since the 1970s. On average, more than 200 calories daily (or 10% of a young person's average daily energy needs) come from sugar-sweetened beverages (Sturm, Powell, Chriqui, & Chaloupka, 2010). Although no studies have found solid evidence that reduced consumption of sodas leads to a lower BMI, studies have shown that a reduction in the consumption of sugar can lead to positive health consequences. Children who reduced sugar intake by the equivalent of one can of soda per day improved their glucose and insulin levels, indicating a reduction in the risk of Type 2 diabetes, even without additional diet or exercise changes (Bremer, Auinger, & Byrd, 2009).

Even if soda taxes do not significantly or directly contribute to weight loss, supporters argue that soda taxes have an enormous revenue potential. A national tax of one cent per ounce on sugar-sweetened beverages would generate at least \$14.9 billion in the first year alone. This money could be spent on measures aimed at reducing childhood obesity or in ways that would counteract the adverse impact of soft drinks on health.

Table 2. Soda Taxes by State*

	2009	2011	Proposed Taxes
Alabama	0	4%	
Arizona	0		40%
Arkansas	0	2%	21¢/gal
California	6.25%	7.25%	1¢/oz.
Colorado	0	2.9%	
Connecticut	6%	6%	
Florida	6%	6%	
Georgia	4%**	4%	
Hawaii	0	4%	
Idaho	0	6.25%	
Illinois	5.25%	6.25%	1¢/oz.
Indiana	7%	7%	
Iowa	6%	6%	
Kansas	0	6.3%	
Kentucky	6%	6%	
Maine	5%	5%	
Maryland	6%	6%	
Minnesota	6.5%	6.88%	
Mississippi	1%**	7%	2¢/oz.
Missouri	0	1.23%	2¢/oz.
Nebraska	5.5%**	5.5%	
New Jersey	7%	7%	
New Mexico	5%	5.13%	5¢/oz.
New York	4%	4%	
North Carolina	4.5%	5.75%	
North Dakota	5%	5%	
Ohio	5.5%	5.5%	
Oklahoma	0	4.5%	
Oregon	0		5¢/oz.
Pennsylvania	6%	6%	
Rhode Island	7%	7%	1¢/oz.
South Carolina	6%	6%	
South Dakota	0	4%	
Tennessee	0	5.5%	1¢/oz.
Texas	6.25%	6.25%	1¢/oz.
Utah	0	1.75%	1%
Vermont	0		1¢/oz.
Virginia	25%*	***	
Washington	6.5%	6.5%	
West Virginia	3%	6%	1¢/16.9 oz.
Wisconsin	5%	5%	
Wyoming	4%**	4%	

* Eight states (Alaska, Delaware, Louisiana, Massachusetts, Michigan, Nevada, and New Hampshire) have no existing or proposed soda taxes and are not included in the chart.

** Tax applies only to vending machine sales.

*** Virginia has a progressive gross receipts tax on soda sales, with the tax amount depending on firm size.

Sources: Drenkard, 2011.

WELLNESS POLICIES

The Child Nutrition and Reauthorization Act of 2004 made it mandatory for all school districts participating in the National School Lunch Program or other nutrition programs, such as the School Breakfast Program, to adopt and implement a wellness policy by the first day of the 2006-07 school year. According to the Act, district wellness policies were required to include:

- Goals for nutrition education;
- Assurance that school meal nutrition guidelines meet the minimum federal school meal standards;
- Guidelines for foods and beverages sold or served outside of school meal programs;
- Goals for physical activity;
- Plans for development, communication, and promotion of the wellness policy; and
- Plans for implementation.

According to the Centers for Disease Control and Prevention (CDC), 2008 Indiana School Health Profiles indicate that among middle schools and high schools in the state, 93% of Indiana schools had a copy of their district's wellness policy (CDC, n.d.).

MAJOR FINDINGS FOR INDIANA

Using the School Wellness Policy Evaluation Tool developed by the Robert Wood Johnson Foundation, CEEP staff evaluated 41 wellness policies received by e-mail from various Indiana school districts. The results revealed that the quality of the policies varied greatly. CEEP found that although many were undeveloped and fragmented, 13 of the 41 policies (31.7%) received full points for fulfilling the federal requirements.

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Policy Perspective

THE ROLE OF SCHOOLS IN PROMOTING CHILDHOOD NUTRITION AND WELLNESS

U.S. Senator Richard Lugar

While we work to address hunger and food insecurity among nearly 20% of our nation's population, we also have to face the fact that nearly one-third of our children are either overweight or obese. Rising obesity rates imperil the health of millions of Americans and reduce the number of young people who can serve in the military. A report by Mission: Readiness entitled, "Ready, Willing, and Unable to Serve," highlights the serious situation our all-volunteer military finds itself in when trying to enlist new recruits. Only one in four of today's 17-24-year-olds are able to enlist, predominantly because of a lack of a high school diploma or obesity.

On December 13, 2010, the Healthy, Hunger-Free Kids Act of 2010, which extends and improves programs associated with the health, wellbeing, and education of our nation's children, was signed into law. As a cosponsor of this legislation, I was pleased that it passed without a single dissenting vote in the United States Senate.



U.S. Senator Richard Lugar

Our nation has maintained school nutrition programs since the 1940's, in part as a matter of national security due to the effects of childhood malnutrition among military-aged recruits. While the situation regarding food security for our population is different today, the basic underlying issue remains the same. For many children from low-income homes, school meals provide the bulk of the nutrition they receive during the day. These children have no choice with regards to where or to which families they are born. It is not their fault they lack access to nutritious food.

While these programs provide nutritious meals to more than 750,000 Hoosier children each day, the Healthy, Hunger-Free Kids Act will also make great strides in addressing obesity by improving the nutritional quality of meals and expanding food access for our nation's at-risk children. The bill establishes a performance-based increase in reimbursements to schools that improve the nutritional quality of school meals and updates rules currently in place that determine the types of foods sold in schools outside of the school meals program. These rules include state and local recommendations but do not prohibit bake sales or snacks and refreshments sold at athletic events. Reductions in other federal spending priorities mean this bill does not add to the deficit.

This legislation also improves the Summer Food Service Program, which feeds more than 45,000 Indiana children in low-income areas during the summer months. While this program has been in existence for more than four decades, I proposed significant improvements after visiting a food service site in New Albany, Indiana, and finding low participation. I heard from Indiana providers that governmental red tape prevented many from participating. A pilot program I authored in 1999 removed the red tape and increased participation by Hoosier children by 80%. This streamlined program has now been made permanent throughout the United States.

In 2005, Senator Bingaman and I advanced an amendment to double funding for the Team Nutrition program. Twenty-one states use this program to help combat childhood obesity, improve child nutrition, and promote physical activity in schools. In addition, I have supported the Physical Education for Progress Act to develop school programs to promote daily physical education and establish minimum weekly fitness requirements.

There are many innovative health and wellness programs at schools, farms, and community organizations across the state. We must work together at the federal, state, local, and individual levels to foster and support initiatives that promote individual and community health and wellness so that each child has a better chance to reach his or her potential.

Richard Lugar is U.S. Senator from Indiana. He is a member and former chairman of the Senate Agriculture, Nutrition, and Forestry Committee.

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Nutrition Education

Of the 41 wellness policies reviewed, 30 included goals for nutrition education. In order to receive the full rating of “2,” district policies must use strong language indicating that nutrition education was required. Out of the 41 policies, 8 received a rating of “1” because the nutrition goals were either implied or stated using weak language, such as *may*, *can*, *encourage*, *might*, *should*, or *try*. Three policies did not include nutrition education goals in their text.

School Meals

Of the 41 wellness policies, 33 clearly noted the district’s intent to meet all federal/USDA school meal regulations and standards for their reimbursable school meals. All meals served under the National School Lunch Program must, under federal law, meet nutrition guidelines based on the goals of the Dietary Guidelines for Americans. However, eight wellness policies had no mention of the district meeting federal/USDA meal regulations.

Competitive Foods and Beverages

A total of 31 of the wellness policies addressed the sale of competitive foods and beverages. Some policies noted that access to foods of minimal nutritional value dispensed in vending machines was to be blocked or limited during the school day, while others simply required that all vending machines carry only healthy foods and beverages. However, for a policy to receive a “2,” the policy must include specific nutrition guidelines selected by the district for all foods available on campus during the school day.

Physical Activity

Because the federal requirement only calls for a physical activity goal to be mentioned in the wellness policy, policies can score well without mandating minimum amounts of physical activity or outlining specific courses of action for meeting the goal. Many of the physical activity goals

reviewed by CEEP were vague. For example, a goal for several wellness policies was that “Physical activity and movement shall be integrated, when possible, across the curricula and throughout the school day.” As a result of the flexible wording of the federal requirement, 35 wellness policies received a “2,” 1 policy received a “1,” and 4 policies did not mention a physical activity goal and received no points.

Development, Communication, and Promotion

According to the federal requirement, parents, students, representatives of the school food authority, the school board, school administrators, and the public are required to be involved in the development of the school wellness policy. In order for wellness policies to receive a maximum rating for this section, all six required groups must be mentioned in the policy. A total of 21 policies successfully integrated these groups; 6 policies specified who was on the policy development team but did not represent all required groups; and 14 policies did not mention a policy development team at all.

Implementation and Evaluation

In all, 20 districts designated the superintendent to ensure implementation and compliance with the wellness policies, 7 districts designated building principals, 4 districts designated Wellness Committees, 1 district designated its board of trustees, and 1 district designated a vague group (“the district”) with these responsibilities. In 7 policies there was no mention of plans for implementation and evaluation.

Other Indiana Policy Initiatives

Indiana recently launched a Comprehensive Nutrition and Physical Activity Plan for 2010-20. The Plan builds on previous state-level efforts such as Governor Mitch Daniels’ INShape Indiana health initiative, which was launched in 2005. This earlier initiative began with an online knowledge-sharing forum and sought to translate knowledge into action through six statewide summits and collaborations with educational institutions around the state.

The Plan outlines six broad goals to increase Hoosiers’ access to healthy food and lifestyle options. Among the goals is a greater emphasis on “increasing the capacity of communities and settings within those (e.g., schools, work sites, faith-based organizations, etc.) to develop and sustain environmental and policy support systems that encourage healthy eating and active living.”

Progress toward this goal will be measured in a number of ways including: decreasing the percentage of high school students who are obese from 13% to 10% by 2020; increasing the percentage of high school students who meet the recommended amounts of physical activity per day from 41% to 55% by 2020, and increasing the percentage of mothers who breastfeed their babies from 71% to 75% by 2020.

Recognizing the importance of educational institutions as agents in promoting healthy living habits among children, the Plan sets 16 school objectives. Although the objectives will not be discussed in detail here, it is important to note one single overarching theme present within each objective: the encouraging of collaboration and sharing of information in and among relevant stakeholders, including the Indiana Department of Education, Indiana State Department of Health, the Coordinated School Health Advisory Council, school personnel, parents, and school board members.

The Plan represents the most recent statewide effort to encourage healthy lifestyles and eating habits among Hoosiers. The significance of the plan lies in its clear-cut framework for state institutions, programs, and partners to tailor and implement.

Indiana recently created the Division of Nutrition and Physical Activity (DNPA) to combat the related problems of obesity, poor nutrition, and sedentary lifestyles. The DNPA is tasked with collecting and evaluating data related to nutrition and physical activity and with overseeing statewide initiatives regarding nutrition and physical activity, including the development of a comprehensive state plan to prevent obesity and promote fitness and healthy eating. By consolidating these activities under the DNPA, which will serve as a resource for partners throughout the state, Indiana hopes to encourage coordination and cooperation while preventing the duplication of efforts among state agencies.

CONCLUSIONS AND RECOMMENDATIONS

Despite the attention focused on the issue at both the state and federal level, the childhood obesity epidemic has worsened since the last CEEP policy brief on the subject (Cline, Plucker, & Spradlin, 2005). This trend is indicative of the need for renewed efforts to promote healthy eating and exercise among school children.

Conclusion

Indiana has lost ground nationally in the fight to reduce the number of overweight and obese children. The negative outcomes associated with childhood obesity are numerous. For school children, obesity directly impacts student health and academic performance. Furthermore, overweight and obese children also spend more time and money on prescription drugs and on outpatient and emergency room services. Although both the federal and state governments have increased efforts to combat this problem, this issue must continue to be actively pursued in a collective and dedicated manner.

Recommendations

For Schools and Education Leaders:

- Strengthen and enforce wellness policies. Currently, too many policies are fragmented and ineffective.
- Limit students' access to vending machines and competitive foods, especially during mealtimes. Educate students and parents about the benefits of these changes.
- Encourage participation in the School Breakfast Program, while ensuring that breakfast meals meet nutritional guidelines.
- Teach students to value healthy foods by cultivating a school garden, installing a Farm-to-School program, or partnering with a locally supplied food item program. Such initiatives enable students to learn to plant and grow their own produce, conduct experiments, write nature-inspired poetry, learn about nutrition, and take

field trips to farms and farmers' markets. For example, Arlington High School in Indianapolis opened Devington Green Acres Farm to be maintained by the students.

- Ensure federal funds for school lunch or breakfast programs are reaching the children most in need by encouraging food service providers and school administrators to improve food service accounts and eliminate wasteful spending.
- Work with government officials, businesses, and community partners to increase the presence of fresh produce in supermarkets, farmers' markets, produce vendors, and community gardens in areas with limited consumer options and to address the relative affordability of healthier food options compared to less healthy food options.

For Parents:

- Support a home environment that encourages healthy eating. There is a proven association between eating together as a family and both lower rates of obesity and healthier eating patterns (Neumark-Sztainer, Hannan, Story, Croll, & Perry, 2003).
- Take an interest in and ask questions about the nutritional value of school meals.
- Limit the amount of money given to children to spend on à la carte and vending machines items in schools.

For Members of Congress:

- Make certain that children receive the full benefits of the proposed initiatives in the Healthy, Hunger-Free Kids Act of 2010.
- Encourage school administrators, community members, and childcare agencies to discuss what effect the Healthy, Hunger-Free Kids Act of 2010 has had on their school or agency since implementation.
- Re-evaluate wellness policies written under the 2004 Child Nutrition Reauthorization Act to incorporate physical activity, locally produced foods, and healthier school meal options for school-aged children.

- Advocate against cutting spending for the Supplemental Nutrition Assistance Program.
- Increase the proportion of fresh fruits and vegetables purchased by the federal government for use in the school lunch program. These new food standards at schools should be supported by the Senate Agriculture Committee.
- Develop nutrition guidelines for processors to align processed commodities with the Dietary Guidelines for Americans.

Conclusion

Research has consistently shown that physical activity both prevents children from being overweight or obese, and helps improve their academic performance, classroom behavior, and self-esteem. With the growing emphasis on improving the nation's academic standards and widespread school budget cuts, however, physical education is too often de-emphasized in school curricula. As a result, students receive less time and fewer resources for exercise, a trend that limits their abilities to maintain a healthy weight. Despite the connection between physical fitness and academic performance, the CDC's 2006 school health policies and programs study found that only 22% of states required schools or school districts to measure or assess students' height and weight or body mass index, and 73% of those states required parent notification of the results (Brener, Wheeler, Wolfe, Vernon-Smile, & Caldart-Olson, 2007).

Recommendations

For Schools and Education Leaders:

- Promote physical activity for all grade levels, whether through recess or physical education classes.
- Offer health services, which can play a central role in addressing obesity-related issues among students by providing screenings, health information, and referrals to students and their families. Many overweight and obese youth lack health insurance and therefore may not get regular medical care at physicians' offices.

- Require that all schools maintain and apply their local district's wellness policy. Though all school districts were required to have a written form of their wellness policy under the Child Nutrition and WIC Reauthorization Act of 2004, enforcement of the legislation has been lax.

For Parents:

- Encourage daily physical activity.
- Limit the amount of time children spend watching television. According to a study done by Indiana University's School of Health, Physical Education, and Recreation, watching more than two hours of television per day increases adolescents' chances of being overweight. This is because children and adolescents are not only decreasing their energy expenditure by sitting idly in front of a television, but the study found that children are often snacking while watching television, increasing their calorie intake (Fleming-Moran & Thiagarajah, 2005).
- Where it can be done safely, encourage walking or biking to school to decrease the risk of obesity.

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ANNOUNCING

CEEP PUBLICATIONS SEARCH PORTAL

CEEP is pleased to announce the CEEP Publications Search Portal. Developed in response to your requests, this new tool will allow you to access all of CEEP's current and previous publications, including our premiere publication, the Education Policy Brief series, as well as other special reports. From the CEEP Publications Search Portal, you can search for topics of interest, or browse existing documents by publication title or year of publication. Of special interest to readers of this brief may be our 2005 Education Policy Brief entitled *Child Obesity in Indiana: A Growing Public Policy Concern*.

Would your readers be interested in current and reliable research on P-16 policy topics? If so, please contact Leigh Kupersmith (dkupersm@indiana.edu) for more information about putting a link to the portal on your organization's website.

WEB RESOURCES

Action for Healthy Kids

<http://www.actionforhealthykids.org>

Centers for Disease Control and Prevention - Division of Adolescent and School Health

<http://www.cdc.gov/healthyyouth>

Food Research and Action Center

<https://www.frac.org>

Let's Move: America's Move to Raise a Healthier Generation of Kids

<http://www.letsmove.gov>

Robert Wood Johnson Foundation

<http://www.rwjf.org/childhoodobesity>

Rudd Center for Food Policy and Obesity

<http://www.yaleruddcenter.org>

U.S. Department of Agriculture - Food Nutrition Service

<http://www.fns.usda.gov/fns>

U.S. Department of Health and Human Services - Healthy People Program

<http://www.healthypeople.gov>

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