

YEAR SIX

# EVALUATION

ARKANSAS ACT 1220 OF 2003 TO COMBAT CHILDHOOD OBESITY



# INTRODUCTION

Obesity continues to be one of the most pressing health threats facing families and communities in Arkansas and in the nation overall. Obesity among children presents both immediate and long-term health risks and is associated with increased medical costs in both childhood and adulthood. With the passage of Act 1220 of 2003 and the subsequent work by schools and communities, Arkansas became a national leader in addressing childhood obesity through school-based initiatives. The Act established mechanisms to help schools and school districts review their policies, practices and facilities related to physical activity and to promote healthy lifestyles for students, staff and families. The ultimate objective of the legislation is to improve the health of Arkansas children and their families.

## YEAR 6 EVALUATION OF ACT 1220

This brief report summarizes the key findings from the sixth year of evaluating the implementation and impact of Act 1220. Results are presented within the following areas: nutrition policy changes in schools and school districts; vending and other sources of competitive foods; physical activity policy changes in schools and school districts; school experiences with body mass index (BMI) assessments; changes in behaviors and beliefs among parents and students; and facilitators and barriers to making changes in schools.

More detailed information and further analyses are presented in a series of short reports available at: [www.uams.edu/coph/reports/#Obesity](http://www.uams.edu/coph/reports/#Obesity).

As in previous years, our research team at the Fay W. Boozman College of Public Health at the University of Arkansas for Medical Sciences conducted the evaluation with support from the Robert Wood Johnson Foundation. Data for the reports that comprise the Year 6 annual evaluation come from mailed surveys of principals and superintendents, telephone interviews of parents and adolescents, and key informant interviews with individuals representing stakeholder groups throughout the state that were conducted during the 2008–09 school year. More details from the Year 6 evaluation and complete evaluation reports for Years 1–5 are available at: [www.uams.edu/coph/reports/#Obesity](http://www.uams.edu/coph/reports/#Obesity).

## KEY FINDINGS

### Nutrition policy changes in schools and school districts

Arkansas public schools and school districts have continued to make healthy changes to their nutrition policies, environments and practices.

- Districts continued to report that they have policies prohibiting the sale of “junk foods”—snacks that provide calories primarily through sugar or fat and offer few vitamins and minerals—in a variety of school venues, as illustrated by Table 1.
- The percentage of schools offering whole white and/or whole chocolate milk continued to decrease, while the percentage of schools offering low-fat or skim milk options continued an upward trend.

TABLE 1. SUMMARY OF SCHOOL DISTRICT NUTRITION POLICIES

District policies	2004	2005	2006	2007	2008	2009
<b>Policy prohibiting “junk foods”</b> (foods that provide calories primarily through fats or sugars and contain few vitamins or minerals) from being offered in:						
<b>À la carte lines in cafeterias***</b>	37%	32%	58%	63%	69%	67%
<b>Student parties****</b>	2%	5%	21%	29%	21%	19%
After-school programs**	16%	15%	30%	35%	32%	28%
<b>School stores****</b>	13%	18%	50%	57%	58%	57%
<b>Vending machines****</b>	18%	27%	53%	61%	62%	61%
Concession stands*	2%	7%	12%	11%	6%	7%
Meetings attended by families	1%	2%	3%	1%	4%	5%
<b>Policy requiring that schools offer students low-fat alternatives to whole milk each day</b>	51%	NA	63%	69%	70%	64%

\*p ≤ .05; \*\*p ≤ .01; \*\*\*p ≤ .001; \*\*\*\*p ≤ .0001

The policies that appear in **bold** print were either required or recommended by the Arkansas Department of Education.

## Vending and other sources of competitive foods

Since the passage of Act 1220, schools have significantly reduced student access to foods and beverages outside of cafeteria meals.

- In Year 6, only 23 percent of adolescents reported that they had access to food vending machines in school, down significantly from 64 percent in Year 1. Similarly, in Year 6, only 61 percent of adolescents reported that they had access to beverage vending machines, down significantly from 97 percent in Year 1.

- Overall, only 20 of the 863 schools reported that they offered students food or beverages for purchase within a school store in Year 6. Four times as many schools offered food or beverages in school stores in Year 1.
- As shown in Figure 1, vending machines were significantly less likely to be located in cafeterias, gymnasiums and snack bars or school stores in Year 6 than in Year 1.

As shown in Table 2, schools continued to make changes to vending machine contents, offering *more* healthier options and *fewer* high-fat, high-sugar items in Year 6 than in Year 1. Over the past year, the greatest increases in healthier options were found in low-fat, low-sugar pastries (up from 22% in Year 5 to 31% in Year 6) and 100% fruit juices (up from 56% in Year 5 to 65% in Year 6).

FIGURE 1. SUMMARY OF VENDING MACHINE ACCESSIBILITY

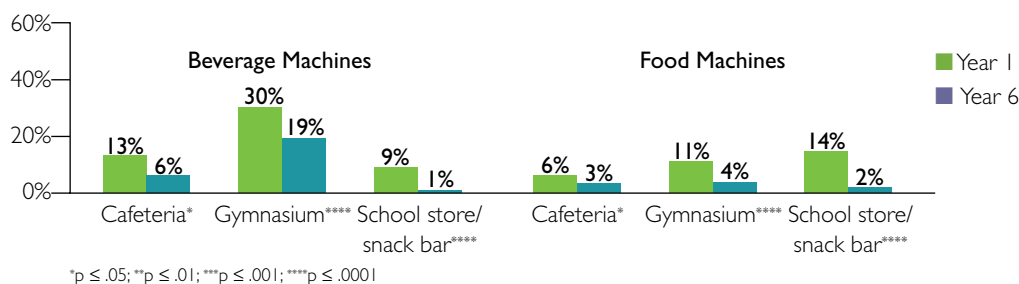


TABLE 2. SUMMARY OF VENDING MACHINE CONTENTS

	2004	2005	2006	2007	2008	2009
<b>Less healthy food and beverage options</b>						
(foods that provide calories primarily through fats or sugars and contain few nutrients)						
Chocolate candy**	85%	NA	74%	70%	75%	67%
Other candy***	89%	NA	76%	77%	70%	68%
Cookies	91%	NA	91%	99%	91%	88%
Pastries	61%	NA	59%	57%	53%	55%
Chips*	91%	NA	80%	87%	84%	83%
Ice cream**	20%	NA	23%	10%	11%	7%
Sodas****	84%	NA	83%	81%	74%	58%
Fruit drinks****	77%	NA	81%	70%	63%	58%
<b>Healthier food and beverage options</b>						
Low-fat, low-sugar cookies****	23%	NA	58%	48%	59%	56%
Low-fat crackers****	26%	NA	55%	51%	54%	59%
Low-fat, low-sugar pastries	16%	NA	37%	24%	22%	31%
Low-fat chips****	43%	NA	85%	78%	77%	82%
100% fruit juices**	53%	NA	71%	61%	56%	65%
Vegetable juices	16%	NA	21%	13%	18%	19%
Water****	82%	NA	93%	92%	92%	95%

\*p≤.05; \*\* p≤.01; \*\*\* p≤.001; \*\*\*\* p≤.0001

Data were not available for Year 2.

## Physical activity policy changes in schools and school districts

As shown in Table 3, schools and school districts have for the most part maintained physical activity policies and practices over the past three to four years.

In Year 6, for the first time, parents were asked how many days per week they believed students should have physical education. Across all school levels (elementary, middle and high school), the majority of parents (55% to 60%) preferred that children have physical education classes four or five days per week, and another one-third (31% to 33%) preferred two to three days per week.

When parents were asked how they might modify the school day to allow more physical education time, the most common response was to lengthen the school day (19%), while, not surprisingly, the option with the least support was to reduce the time spent on academic instruction (2%). Other unpopular options included offering fewer study halls (11%), reducing electives such as art and music (8%), reducing break times and time between classes (7%), and creating physical activity options after school (6%).

The majority of parents (55% to 60%) believed that students should have physical education classes four or five days per week. This was true among parents of elementary-, middle- and high-school students.

TABLE 3. SUMMARY OF SCHOOL DISTRICT PHYSICAL ACTIVITY POLICIES

District Policies	2004	2005	2006	2007	2008	2009
Policy requiring lifetime physical activities be included in physical education program:						
Elementary schools	39%	36%	47%	56%	48%	52%
Middle schools	52%	44%	57%	63%	55%	59%
High schools	56%	45%	59%	66%	57%	57%
Policy requiring student fitness levels be measured on a regular basis	26%	28%	37%	37%	35%	45%
Policy requiring that newly hired physical education teachers be certified to teach physical education						
<b>Elementary schools</b>	69%	64%	74%	86%	88%	86%
Middle schools	87%	85%	86%	91%	92%	90%
High schools	88%	87%	87%	91%	93%	90%

None of the changes from 2008 to 2009 were statistically significant.

The policies that appear in **bold** print in this table were either required or recommended by the Arkansas Department of Education.

## School experience with BMI assessments

Year 6 key informant interviews indicated a growing comfort and familiarity with school-based BMI measures, as well as with the process of reporting results to parents.

- In Year 6, only 16 percent of principals reported that their school had some level of difficulty with the BMI measurements, down from 20 percent in Year 5 and 32 percent in Year 1.
- Only 3 percent of principals reported negative feedback from parents, concerns about time taken from academic instruction, and/or refusal to participate by parents or students.
- Only 2 percent of principals reported concerns about the accuracy and/or logistics of student BMI measures.

Table 4 illustrates that parental knowledge and attitudes concerning student BMI measures have remained essentially stable over time.

- Confidence in the confidentiality of the BMI measurement and reporting processes continued to increase.
- Nearly all parents (96%) reported reading at least some of the BMI report and nearly half (46%) reported finding the report helpful.

There continues to be very little concern among schools or parents about school-based BMI measures or the process of reporting BMI results to parents.

As Tables 5 and 6 indicate, there has been no evidence of a significant increase in any adverse consequences resulting from student BMI measures or any other Act 1220 mandates since Year 1.

- Weight-based teasing continued to decrease in Year 6.
- Unhealthy adolescent dieting behaviors, including use of diet pills, has declined since Year 1 but has been relatively stable in recent years.
- More than half (53%) of parents reported they had signed their child up for sports or exercises classes in the past six months, up significantly from 42 percent in Year 1.

TABLE 4. PARENTAL KNOWLEDGE AND ATTITUDES TOWARD BMI ASSESSMENT

Knowledge and attitudes	2004	2005	2006	2007	2008	2009
Aware of school BMI measurements***	75%	83%	87%	89%	89%	91%
Not at all or only a little concerned about classmates finding out about BMI measurements*	NA	71%	72%	68%	75%	76%
Comfortable getting BMI report from school	69%	65%	66%	58%	63%	64%
Read some or all of BMI report	NA	95%	95%	95%	96%	96%
Found BMI report at least somewhat helpful	NA	49%	49%	46%	48%	46%

\*p≤.05; \*\* p≤.01; \*\*\* p≤.001; \*\*\*\* p≤.0001

TABLE 5. STUDENT REPORTS OF POSSIBLE RESPONSES TO ACT 1220

	2004	2005	2006	2007	2008	2009
Concerned about weight	24%	29%	26%	25%	24%	21%
Teasing because of weight	12%	9%	6%	12%	7%	5%
Teasing for other reasons	21%	20%	20%	25%	16%	16%
Gone on a diet	29%	23%	26%	27%	19%	20%
Took diet pills	6%	5%	2%	5%	2%	2%
Increased physical activity	60%	63%	63%	72%	58%	65%

None of the statistical comparisons were statistically significant.

TABLE 6. PARENTAL REPORTS OF POSSIBLE RESPONSES TO ACT 1220

	2004	2005	2006	2007	2008	2009
Put child on diet***	9%	6%	6%	5%	6%	5%
Gave child diet pills	<1%	<1%	1%	<1%	1%	<1%
Increased child's exercise or physical activity	28%	28%	29%	32%	35%	31%
Signed child up for sports or exercise classes*****	42%	40%	45%	48%	49%	53%

\*p≤.05; \*\* p≤.01; \*\*\* p≤.001; \*\*\*\* p≤.0001

## Changes in behavior and beliefs among parents and students

Since the passage of Act 1220, parental awareness of health problems associated with childhood obesity has increased. In Year 6, for the first time, parents were asked about their perceptions of the obesity epidemic and the role of schools in combating that epidemic.

- A majority of parents (52%) said they believed the problem of childhood obesity was very serious for the state of Arkansas. Another 40 percent said the problem was somewhat serious.
- One-third of parents felt that schools play a very important role in trying to prevent childhood weight problems. Nearly half (46%) felt that schools play an important role, and only 8 percent felt that the school's role was not important at all.

As shown in Table 7, there is no new evidence to suggest that families were making substantial changes to improve their children's nutritional environment outside of school. Data did indicate that parents were helping children make physical activity a priority.

Over the past few years, there has been no increase in the percentage of parents who reported making substantial changes to improve their children's nutritional environment outside of school.

Year 6 data indicated that families were making breakfast before school a priority.

- A large majority (84%) of parents reported that their child ate breakfast every day before school.
- The majority of those students (66%) ate breakfast at home, while a smaller number (14%) ate in the school cafeteria.
- The percentage of adolescents who reported eating breakfast daily increased from 55 percent in Year 5 to 65 percent in Year 6.

TABLE 7. FAMILY NUTRITION AND PHYSICAL ACTIVITY BEHAVIORS

Behaviors	2004	2005	2006	2007	2008	2009
<b>Nutrition</b>						
Trying to limit family consumption of chips, sodas and sweets*	76%	79%	79%	83%	81%	81%
Younger child (≤ 13 years of age) drank no sodas yesterday***	44%	47%	49%	57%	53%	56%
Average number of times per month parent modified recipes to make them healthier	2.3	NA	2.5	2.7	2.3	2.1
Average number of times family ate in fast-food restaurant last month*	5.9	NA	6.4	6.0	6.5	6.6
<b>Physical activity</b>						
Limit child's screen time, including television, video games and Internet	72%	71%	75%	74%	74%	71%
To give more time for homework	NA	20%	20%	17%	20%	19%
To give more time for physical activity****	NA	33%	37%	40%	47%	49%
As punishment for bad behavior**	NA	2%	2%	1%	<1%	<1%
Because of TV program content****	NA	8%	7%	6%	4%	3%
To give more time for sleep*	NA	6%	7%	4%	5%	4%
Require child to stay inside after school rather than play outside***	11%	10%	10%	9%	8%	7%

\*p≤.05; \*\* p≤.01; \*\*\* p≤.001; \*\*\*\* p≤.0001

For the first time in the six-year evaluation, adolescents reported a significant decrease in the frequency of eating at fast-food restaurants.

As shown in Table 8, adolescents continued to report significant declines in vending machine purchases.

- Among those students with access to food vending machines in school, the average number of vending purchases made in the past month continued to decline, showing significant reductions since Year 1.
- Among those students with access to beverage vending machines in school, the average number of purchases in the past month was 5.7, down from 7.2 in Year 5 and from 11.6 in Year 1.
- Fully half of the students reported making no beverage purchases in the past month, an increase from 41 percent in Year 5 and a significant increase from 22 percent in Year 1.
- For the first time in the six-year evaluation, adolescents reported a significant decrease in the frequency of eating at fast-food restaurants during the week prior to the interview, down from 6.5 times in Year 1 to 4.9 times in Year 6.
- In addition, during the Year 6 interviews, 42 percent of adolescents reported that they had not consumed any sodas within the previous 24 hours, a significant increase from 33 percent in Year 1.

## Facilitators and Barriers To Making Changes in Schools

School personnel reported facilitators and barriers to making changes to both physical activity and nutrition programs. Several common themes emerged.

- Schools need updated facilities and equipment to effect change.
- Schools need additional funding—to hire more staff, to update facilities and purchase additional equipment, and to support innovative programming.
- Schools need support—from within, including support from district administrators, school principals and teachers. Community support also is important.
- Time is an issue for schools. Schools struggle to meet the academic needs of students and also face pressure to increase physical activity time and lengthen time allotted for meals in a single school day. Substantial transportation time to and from school is an issue for many students.

Despite these barriers, many schools have found ways to secure the additional funding needed to update facilities and equipment. Many schools have leveraged community support to achieve change. During the upcoming year, we will be asking schools throughout the state to share their successful programs with us and we will investigate in more depth the strategies that those schools used to achieve success.

TABLE 8. STUDENT REPORTS OF VENDING MACHINE ACCESS AND PURCHASE PATTERNS

Access or purchase pattern	2004	2005	2006	2007	2008	2009
<b>Vending machine available at school</b>						
Food machine****	64%	58%	39%	31%	35%	23%
Beverage machine****	97%	94%	84%	74%	67%	61%
<b>Student purchases from food machines</b>						
Average number of purchases per month	10.3	NA	2.9	5.2	5.5	4.4
Student made no purchase in past month	28%	33%	59%	58%	54%	45%
Student made daily purchases in past month	8%	5%	4%	11%	2%	5%
<b>Student purchases from beverage machines</b>						
Average number of purchases per month*	11.6	NA	5.4	7.2	7.2	5.7
Student made no purchase in past month***	22%	29%	37%	34%	41%	50%
Student made daily purchases in past month***	18%	11%	7%	10%	12%	9%

\*p≤.05; \*\* p≤.01; \*\*\* p≤.001; \*\*\*\* p≤.0001

Adolescents have reported significant reductions in vending machine purchases at school since the passage of Act 1220.

## CONCLUSION

This evaluation suggests that, six years after the passage of Act 1220, school environments have become healthier for students and staff. Schools continued to make changes to vending contents and other nutrition policies and to maintain changes that have been made since Year 1. Families have become more aware of the serious health problems associated with childhood obesity and generally recognize the role that schools can play in combating the problem. To date, there is little evidence showing that families have made substantial changes to improve their children's nutritional environment outside of school, yet there is growing evidence to suggest that parents have helped their children make physical activity a priority.

In this past year, adolescents continued to report increased physical activity, as well as a decline in vending purchases and soda consumption. For the first time, there is preliminary evidence to suggest that adolescents may be reducing their consumption of fast food. It will be important to monitor this potential trend.

In the coming year, we will continue to monitor changes in school environments, policies and practices and to evaluate how those changes impact students, families and school personnel. As we did in Year 2, we will survey community-based physicians who are most likely to engage with families and students (i.e., family practice and general practice physicians and pediatricians) to assess the impact of Act 1220 on medical providers seven years after its passage.

As data analysis continues in the coming year, we will be considering in more depth the responses of families and adolescents to the implementation of Act 1220 and other childhood obesity-prevention initiatives ongoing in the state. Plans for the Year 7 evaluation include the following:

- We will be investigating to determine whether subgroups of Arkansas families and adolescents are making healthy changes in nutrition and physical activity behaviors. Of particular interest will be those children and their families who are at highest risk for health problems because of their weight status.

- We will also be reporting on findings from 113 school visits made during the 2008–09 school year to gather more detailed information about the changes that are occurring in schools throughout the state, including new innovative nutrition and physical activity programs. Our analysis of the data obtained during those school visits will focus initially on identifying the characteristics of schools that have been successful in reducing the percentage of students who are overweight or obese and identifying the keys to their success.
- As we complete the parent interviews for Year 7 in spring 2010, we will be interviewing parents of students who are enrolled in the schools we visited. These interviews will help us understand how families may have influenced schools in their efforts to create healthier school environments and, conversely, how changes in those school environments may have impacted families.
- Further, we will ask principals to share stories of the many programs that are being implemented in schools throughout the state to support healthy eating and physical activity among students and their families. These stories will highlight the many creative ways that schools are working with their communities to combat childhood obesity. As the findings from these investigations become available, we will prepare and disseminate reports to policy-makers, school personnel, researchers and other stakeholders.

In addition to our state-focused efforts, we continue to work with research teams from five other states—Delaware, Mississippi, New York, Texas and West Virginia—that are funded by the Robert Wood Johnson Foundation to assess their own statewide policies aimed at addressing childhood obesity. Legislation enacted in Mississippi and West Virginia has provided specific opportunities to compare and contrast how policies are being implemented and how those policies are impacting schools and families in the three states. As always, we will strive to ensure that these evaluations will help inform decision-makers and advocates who are working to reverse the childhood obesity epidemic and improve health outcomes for our nation's children.