

YEAR FIVE EVALUATION

ARKANSAS ACT 1220 OF 2003 TO COMBAT CHILDHOOD OBESITY



INTRODUCTION

Obesity is recognized as one of the most pressing health threats faced by families and communities in Arkansas and in the nation overall. Today, nearly one-third of U.S. children and adolescents—about 23 million youths—are obese or overweight.¹ Though the alarming rates of increase among some children and youths appear to have slowed or stabilized, both nationally² and in Arkansas,³ these rates continue to rise among teens and many racial and ethnic populations. The serious health and economic implications associated with obesity are stimulating federal and state legislative changes to address the epidemic.

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 a comprehensive school-based intervention. The Act mandated a limited number of immediate statewide policy changes and also established mechanisms to help create future changes at both the state and local levels. The ultimate objective of the legislation is to improve the health of Arkansas children and their families.

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YEAR 5 EVALUATION OF ACT 1220

This brief report summarizes the key findings from the fifth year of evaluating the implementation and impact of Act 1220. Results of the Year 5 evaluation are presented within the following data areas: nutrition policy changes in schools and school districts; vending and other sources of competitive foods; parent and adolescent responses to obesity-prevention initiatives within the state; changes in behaviors, knowledge and beliefs among parents and students; comparisons by student weight status; and key informant interviews. More detailed information and further analysis of findings from each data area will be available in spring 2009.

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 this report 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.

¹ Ogden CL, Carroll MD, Flegal KM. "High Body Mass Index for Age Among US Children and Adolescents, 2003-2006." *Journal of the American Medical Association*, 299(20):2401-2405, 2008.

² Ibid.

³ Phillips, M.M., Raczynski, J.M., and Walker, J.F. for the Act 1220 Evaluation Team (2006) *Year Four Evaluation: Arkansas Act 1220 of 2003 to Combat Childhood Obesity*. Available: www.uams.edu/coph/reports/#Obesity.

KEY FINDINGS

Nutrition policy changes in schools and school districts

Schools continue to make healthy changes to their nutrition policies, environments and practices.

- More and more school districts are enacting policies prohibiting the sale of “junk foods” in school cafeterias and restricting such foods in other school venues.
- A significantly higher percentage of schools report that they require healthy options at school-sponsored events than in Year 1.
- There has been a significant increase in the percentage of school districts that support policies to discourage use of food as a classroom reward.

Schools continue to make healthy changes to their nutrition policies, environments and practices.

SUMMARY OF SCHOOL DISTRICT POLICIES

District policies	2004	2005	2006	2007	2008
Physical education/physical activity					
Policy prohibiting use of physical activity as punishment for bad behavior in:					
Physical education classes****	24%	28%	39%	39%	46%
Other classes***	32%	31%	44%	41%	49%
Policy requiring lifetime physical activities be included in physical education program					
Elementary schools****	39%	36%	47%	56%	48%
Middle schools	52%	44%	57%	63%	55%
High schools	56%	45%	59%	66%	57%
Policy requiring student fitness levels be measured on a regular basis					
	26%	28%	37%	37%	35%
Policy requiring that newly hired physical education teachers be certified to teach physical education					
Elementary schools****	69%	64%	74%	86%	88%
Middle schools	87%	85%	86%	91%	92%
High schools	88%	87%	87%	91%	93%
Nutrition					
Policy prohibiting “junk foods” (foods that provide calories primarily through fats or sugars and contain few vitamins or minerals) from being offered in:					
A la carte lines in cafeterias***	37%	32%	58%	63%	69%
Student parties****	2%	5%	21%	29%	21%
After-school programs**	16%	15%	30%	35%	32%
School stores****	13%	18%	50%	57%	58%
Vending machines****	18%	27%	53%	61%	62%
Concession stands*	2%	7%	12%	11%	6%
Policy prohibiting or discouraging use of food or food coupons as rewards in classrooms****					
	12%	22%	70%	76%	74%
Policy that schools offer students low-fat alternatives to whole milk each day					
	51%	NA	63%	69%	70%

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

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

Vending and other sources of competitive foods

Schools have significantly reduced students' access to food and beverage vending machines on campus.

- In compliance with state regulations, schools have essentially eliminated students' access to vending machines prior to and during lunch periods. Only 17 percent of schools continue to allow access during prohibited time periods—and these schools are likely honoring vending contract provisions.

Parents continue to endorse restrictions and healthy changes for vending machines in middle and high schools.

- The percentage of parents who believe that vending machines should offer only healthy items continues to increase, up from 49 percent in Year 1 to 63 percent in Year 5.
- Only 2 percent of parents believe that the current content of vending machines is acceptable.

Parents continue to endorse restrictions and healthy changes for vending machines in middle and high schools.

SUMMARY OF VENDING MACHINE ACCESSIBILITY

	2004	2005	2006	2007	2008
Vending machine locations					
Beverage machines					
Cafeteria**	13%	11%	10%	9%	8%
Gymnasium****	30%	26%	24%	23%	18%
Snack bar/school store****	6%	7%	4%	2%	3%
Staff/teachers' lounge	71%	78%	78%	78%	80%
Hallway	NA	20%	18%	19%	18%
Snack food machines					
Cafeteria*	6%	5%	5%	4%	2%
Gymnasium***	11%	9%	8%	6%	4%
Snack bar/school store**	14%	10%	6%	4%	6%
Staff/teachers' lounge	70%	66%	72%	80%	79%
Hallway	NA	16%	13%	10%	12%
Times of student access					
Beverage machines					
Before school****	28%	30%	20%	17%	18%
Before lunch*	10%	10%	9%	7%	6%
During lunch****	43%	40%	20%	19%	17%
After lunch****	16%	18%	27%	24%	25%
During breaks****	13%	13%	8%	4%	4%
After school****	39%	37%	31%	31%	29%
Snack food machines					
Before school**	29%	33%	21%	14%	18%
Before lunch**	11%	11%	8%	5%	4%
During lunch****	45%	45%	20%	19%	16%
After lunch*	16%	19%	25%	22%	22%
During breaks****	15%	15%	8%	5%	5%
After school**	38%	39%	30%	28%	28%

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

Parent and adolescent responses to obesity-prevention initiatives within the state

There is no evidence of increased weight-based teasing, dieting, use of diet pills or embarrassment associated with BMI measurements since the passage of Act 1220.

- The percentage of students who report starting a diet has decreased significantly since Year 1, and during that same time student reports of weight-based teasing also have declined.

The Act 1220 mandates seem to have raised awareness of weight issues among students.

- Twenty-one percent of parents indicated that their child expressed concern about his/her weight in the past year, up slightly from 19 percent who reported such concerns in Year 4.
- Among those students who expressed concern to their parents, 66 percent did so only after the BMI measurements were initiated.

There is no evidence of increased weight-based teasing, dieting, use of diet pills or embarrassment associated with BMI measurements since the passage of Act 1220.

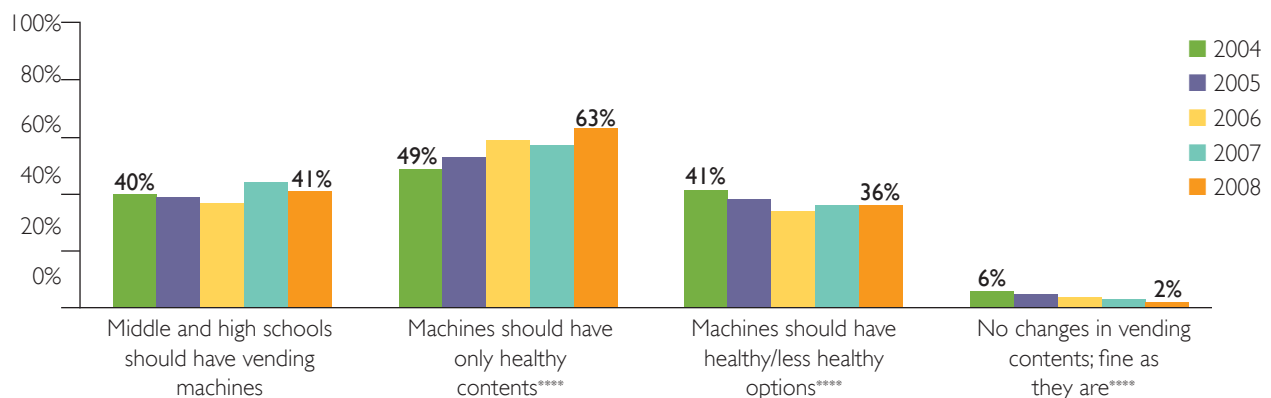
- Approximately 40 percent of parents were not worried about their child's expressed concerns, either because they believed the concerns to be appropriate for the child's age (26 percent) or because they felt that the concerns were appropriate for the child's weight status (15 percent).

STUDENT REPORTS OF POSSIBLE CONSEQUENCES OF ACT 1220

	2004	2005	2006	2007	2008
Concerned about weight	23%	29%	25%	25%	24%
Embarrassed by measurements	NA	12%	7%	11%	10%
Not at all comfortable with BMI report**	29%	22%	15%	25%	16%
Teasing because of weight	12%	9%	6%	12%	7%
Teasing for other reasons	21%	20%	19%	25%	16%
Gone on a diet*	29%	23%	26%	27%	19%
Took diet pills	6%	5%	2%	5%	2%
Increased physical activity	59%	63%	62%	72%	58%

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

PARENTAL BELIEFS ABOUT SCHOOL VENDING MACHINES



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

Changes in behaviors, knowledge and beliefs among parents and students

More parents are aware that heart disease, type 2 diabetes and other serious health issues are associated with overweight in childhood since the passage of Act 1220, but this awareness has not translated into family behavior changes related to nutrition.

- Parents do not report substantial changes in the frequency of eating out or frequency of modifying recipes to make them healthier.
- Similarly, adolescents have not reported substantial changes in their overall dietary habits, such as consumption of soda or “junk foods” since Year 1.

Students report a significant decline in vending machine purchases.

- Only 35 percent of adolescents report that they have access to food vending machines in schools, and the average number of vending purchases made by these students in the past month has declined significantly since Year 1.
- A higher percentage of students report making no purchases in the past month, and the percentage who report daily food or beverage purchases has declined.

Parents are helping their children make physical activity a priority.

- A higher percentage of parents report that they have increased their child’s physical activity level.

More parents are aware that heart disease, type 2 diabetes and other serious health issues are associated with overweight in childhood since the passage of Act 1220, but this awareness has not translated into family behavior changes related to nutrition.

- While there has been no significant change in the percentage of parents who limit TV or computer screen time, a higher percentage of parents are limiting children’s screen time specifically to make more time for physical activity.
- Since Year 1, a significantly lower percentage of parents report requiring their children to remain inside after school rather than playing outside.

FAMILY NUTRITION AND PHYSICAL ACTIVITY PATTERNS

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

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

Comparisons by student weight status

The school-based obesity-prevention initiatives seem to have a stronger overall impact on overweight students and their families.

- Parents of overweight children are more likely to:
 - express concern about the child’s weight;
 - be concerned about the confidentiality of BMI measurements; and
 - try to limit the family’s consumption of “junk foods.”
- Adolescents who are overweight are more likely to report:
 - being concerned about their weight;
 - being embarrassed about the BMI-measurement process;

- trying to change to a healthier diet;
- starting a diet within the past six months; and
- increasing physical activity within the past six months.
- Adolescents who are overweight also were more likely than those who are not overweight to report that they had not purchased beverages from a vending machine at school in the past month.
- Approximately 40 percent of adolescents who are overweight reported no soda consumption on the previous day, up from 28 percent in Year 4.

STUDENT REPORTS OF VENDING MACHINE ACCESS AND PURCHASE PATTERNS

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

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ADOLESCENT ATTITUDES AND BEHAVIORS COMPARED BY STUDENT WEIGHT STATUS IN YEAR 5

Knowledge/behavior	Student not overweight		Student overweight	
	2007	2008	2007	2008
Concerned about weight****	60%	16%	80%	42%
Embarrassed by BMI measurements	5%	9%	19%	12%
Trying to change to healthier diet***	60%	55%	80%	82%
Started a diet within the past six months*	19%	13%	46%	32%
Increased exercise within past six months	66%	57%	87%	62%
Purchased from a beverage vending machine in school within past 30 days				
Never	26%	37%	46%	46%
At least once	74%	63%	54%	54%
Drank sodas yesterday				
None	43%	38%	28%	41%
At least one	57%	61%	71%	59%
Parent discussed BMI report with student	28%	31%	34%	35%
Physician discussed BMI report with student	10%	15%	24%	16%

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

Note: P-levels indicate significant differences between students who were not overweight and students who were overweight in 2008.

Key Informant Interviews

Key informant interviews generally reinforced the survey findings. Overall, school personnel, including principals, nurses, superintendents and wellness committee members appear to believe that the current regulations associated with Act 1220 are suitable for helping to create a healthier school environment. They also believe that these regulations should be monitored over time to determine their impact on students. Many informants discussed the

strategies their schools are using to meet the requirements of Act 1220, and their local initiatives that go above and beyond the mandated changes. Several informants emphasized the need for accountability and enforcement at the local and state levels, while others voiced concern about students who continue unhealthy behaviors outside of the school environment.

CONCLUSION

This evaluation suggests that, five years after the passage of Act 1220, school environments have become healthier for students and staff. Anecdotally, key informants and others report that the awareness of the issue of childhood obesity, at the population and family level, has increased—and that students and families are responding well to the mandated changes. We find little evidence that families are making substantial changes to improve their children’s nutritional environment outside of school, yet there is some early evidence that parents are helping their children make physical activity a priority.

In the coming year, we will continue to monitor changes that may occur in Arkansas’ schools and to evaluate how those changes impact students, families and school personnel. We also will visit a number of schools across the state to obtain more detailed information about the changes that are occurring within specific schools, and the factors that support and inhibit those changes. As a result of these school visits, we hope to answer the following questions:

- What are the characteristics of schools that have been successful in reducing the percentage of students who are overweight or obese, and how did they achieve that success?
- What factors are supporting or inhibiting the implementation of changes and policies that impact food and physical activity environments within schools?

- What barriers do schools face as they work to implement state-mandated and locally initiated policy changes? What strategies have been used to overcome those barriers?
- Are subgroups of Arkansas families and adolescents responding differently to the implementation of Act 1220 mandates?

We began these expanded school reviews in Year 5, and will continue this work into Year 6 of our ongoing evaluation of Act 1220. As new findings become available, short reports will be disseminated to policy-makers, school personnel, researchers and other stakeholders.

In addition to our state-focused efforts, we continue to work with five other evaluation teams—from 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. Together, our evaluation teams will study how the policies are being implemented, document the outcomes of and responses to the policy changes, and assess how each state’s experiences are similar to or different from our own. These continued efforts to monitor, evaluate and report on Act 1220 and other statewide initiatives that aim to improve health outcomes for children will help inform decision-makers and advocates who are working to reverse the nation’s childhood obesity epidemic.