Hearts N' Parks—Phase II Report of 2002 Magnet Center Performance Data

National Recreation and Park Association

In cooperation with the:
National Heart, Lung, and Blood Institute
National Institutes of Health
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

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Contents

I. Report Summary

Hearts N' Parks is a national, community-based program supported by the National Heart, Lung, and Blood Institute (NHLBI), of the National Institutes of Health (NIH), and the National Recreation and Park Association (NRPA). This program is designed to reduce the growing trend of obesity and the risk of coronary heart disease in the United States by encouraging Americans of all ages to aim for a healthy weight, follow a heart-healthy eating plan, and engage in regular physical activity while taking part in local park and recreation department programs.

These goals are especially important because the number of overweight children and adolescents, as well as obese adults, in the United States have more than doubled over the past two decades. Approximately 65 percent of adults are currently overweight or obese. In addition, approximately 10 percent of preschool children and approximately 15 percent of school-age children and adolescents are considered overweight. Both overweight and obesity acquired during childhood or adolescence may persist into adulthood and increase an individual's risk of developing heart disease and other conditions later in life.

Hearts N' Parks began as pilot programs in North Carolina in 1999 and in Arlington County, VA, in 2000. Physical activity and education regarding heart-healthy eating were incorporated into local park and recreation programs for youth and adults. An evaluation of program effectiveness was accomplished through administering pre- and postquestionnaires to participants.

As a result of the success of the pilot programs, Hearts N' Parks was expanded in 2002 to 50 sites in 10 States (Arizona, Florida, Georgia, Illinois, Indiana/Ohio, Maryland, Michigan, Missouri, New Mexico, and Nevada), as well as 6 sites associated with the U.S. Marine Corps. The 56 sites, known as Magnet Centers, were selected based on the level of risk of cardiovascular disease in their areas, whether they served special populations (e.g., seniors or racial/ethnic minority groups), the level of park and recreation agency interest, and program capability.

To build program sustainability, Magnet Center sites were required to make a 3-year commitment to Hearts N' Parks and to undertake specific responsibilities, including initiating Hearts N' Parks with one youth and one adult program in the first year, expanding heart-healthy programming efforts each consecutive year, measuring program performance by administering pre- and postquestionnaires to participants, and sharing their data with NHLBI via a Web-based tracking and reporting system.

From January through March 2002, Magnet Center site personnel attended training sessions that focused on the 5 P's of Hearts N' Parks: People, Programs and Practices, Public Visibility, Partnering, and Performance Indicators. Sites were provided with a "Hearts N' Parks Community Mobilization Guide" and other NHLBI materials to assist them in designing and implementing their programs. Participants also received instruction on how to administer the three types of pre- and postquestionnaires found in the "Hearts N' Parks Community Mobilization Guide" that corresponded to child, adolescent, or adult programs. In addition, Magnet Center personnel learned how to submit program data into a new Web-based tracking and reporting system after compiling it at the program site. To ensure that site personnel were able to submit program data

successfully, a posttraining exercise was developed, in which sites completed and submitted the assignment via the Web-based system.

Sites initiated Hearts N' Parks programs following the training sessions. The majority of the Magnet Center sites implemented one to three programs. The size of the programs ranged from 3 to nearly 200 participants. Most of the child and adolescent programs consisted of summer camps, although a few were after-school programs. One adolescent program targeted at-risk youth using an innovative performing group approach. Children's programs lasted an average of 7 weeks, while adolescent programs lasted closer to 10 weeks on average. Adult Hearts N' Parks programs consisted of a mixture of senior programs, city employee programs, general parks and recreation programs, and one aquatics program for disabled persons. The programs averaged approximately 12 weeks in length.

Data collection began with the administration of performance questionnaires by Magnet Center staff to all participants at the beginning of the programs (pretest), and again at the completion of the programs (posttest). These questionnaires were designed to assess participants' knowledge, attitudes, and behavior related to heart-healthy eating and physical activity, as a means of evaluating program performance. Magnet Center staff entered their participants' pretest and posttest responses into spreadsheet templates, uploaded the spreadsheets into the Web-based tracking and reporting system, and received a quick analysis of their programs.

A total of 36 Magnet Center sites submitted pre- and posttest data for analysis. On average, the sites submitted 2 programs each, totaling 68 programs: 34 child, 8 adolescent, and 26 adult programs. Overall, 1,900 children, adolescents, and adults participated in Hearts N' Parks programs. Of these, approximately 1,200 participants completed both the pretest and posttest.

The quality of the data varied between the Magnet Center sites. Project staff cleaned, processed, and merged the submitted data into separate child, adolescent, and adult Statistical Analysis Software (SAS) databases and conducted a comprehensive analysis in January and February 2003.

Based on the results of the 68 programs, Hearts N' Parks was clearly a success in 2002. Of the approximately 1,200 participants who completed both the pretest and posttest, significant improvements were demonstrated from pre- to posttest in almost all indicators of heart-healthy eating knowledge, attitude, behavior, and physical activity.

Results indicated significant improvement by children in the areas of heart-healthy eating knowledge, behavior, and intention, suggesting increased ability and willingness of children to identify and choose healthy foods over less healthy ones. Scores in physical activity attitude also increased significantly, suggesting an increase in children's interest in various kinds of physical activities while participating in Hearts N' Parks programs. Gender differences were noted—girls scored higher than boys on heart-healthy knowledge, behavior, and intention, and boys scored higher than girls on physical activity attitude. The significant improvements observed in children's programs apply to the older group of 10–11-year-olds as well as younger children (9 and younger). This is a good indication that Hearts N' Parks had positive effects on both younger and older children. Among States with multiple children's programs, Florida, New Mexico, Michigan, and Nevada achieved the highest posttest results across all sections. In terms of individual program sites, the Las Vegas (NV) Kids Kamp posted impressive results in every section, showing dramatic pre- and posttest improvement and high posttest scores. Kids Kamp

participants also reported getting better at an average of over 12 different activities during their program.

Adolescent programs showed significant improvement in four of the seven performance areas, notably "Heart-Healthy Eating Behavior and Intention." The only area in which improvement did not occur was "Overweight/Obesity Attitude." Girls did somewhat better than boys in every area. Although most adolescents were ages 12–13, older adolescents (14 and older) earned higher scores in most knowledge, attitude and behavior areas, and made more improvement from pre- to posttest. Among adolescent programs, Arizona's Realize Productions, in Glendale, posted the most significant gains in performance out of the eight Arizona programs.

Adults, 78 percent of whom were women, showed significantly higher scores at posttest in every area of performance, including knowledge about proper nutrition, overweight/obesity risks, physical activity, high blood pressure, and high cholesterol. In addition, they demonstrated healthier attitudes toward overweight/obesity, healthy eating habits, and physical activity, and a greater tendency to make healthy food choices and participate in moderate physical activity. This strong performance is observed in adults older than age 60 as well as those 60 and younger, and in both college-educated and noncollege-educated adults. Collectively, these adult performance measures point to an unmistakable pattern of change in adults' appreciation of the importance of heart-healthy eating and physical activity. Missouri and Maryland, in particular, stand out for having programs that performed well. Among single sites, the adult programs in Baltimore, MD, Springfield, MO, and Oldsmar, FL, demonstrated significant improvement in many areas of heart health at posttest.

The principal components analysis carried out on the various attitude and behavior-related measures (all Likert-type scales) in child, adolescent, and adult questionnaire sections, indicated that most are valid measures of the constructs they represent.

In future programs, program personnel should work to reduce the number of participants who fail to complete both the pre- and posttest questionnaires, and Magnet Centers should look to increase the numbers of adult men and adolescents who participate in Hearts N' Parks.

Overall, the results of the performance measures demonstrate clearly that the Hearts N' Parks program implemented by the Magnet Center sites met their performance objectives. After only 1 year of programming, the Magnet Center sites with their multitude of park and recreation department programs have proven they can affect heart-healthy change in people of all ages. A strong foundation is therefore in place for the continued success of Hearts N' Parks.

II. Introduction

Project Overview

Hearts N' Parks is a national, community-based program supported by the National Heart, Lung, and Blood Institute (NHLBI), of the National Institutes of Health (NIH), and the National Recreation and Park Association (NRPA). This program is designed to reduce the growing trend of obesity and the risk of coronary heart disease in the United States by encouraging Americans of all ages to aim for a healthy weight, follow a heart-healthy eating plan, and engage in regular physical activity while taking part in local park and recreation department programs.

The specific performance objectives of Hearts N' Parks are:

- Increase the percentage of children, adolescents, and adults who engage in heart-healthy behaviors (heart-healthy eating and physical activity) to prevent the development of cardiovascular disease (CVD) risk factors

- Increase children's, adolescents', and adults' knowledge of nutrition and healthy eating habits

- Improve children's, adolescents', and adults' attitudes toward healthy eating and physical activity

These goals and objectives are especially important because the numbers of overweight children and adolescents, as well as obese adults in the United States have more than doubled over the past two decades. Approximately 65 percent of adults are currently overweight or obese. In addition, approximately 10 percent of preschool children and approximately 15 percent of school-aged children and adolescents are considered overweight. Both overweight and obesity acquired during childhood or adolescence may persist into adulthood, increasing the individual's risk of developing heart disease and other conditions later in life.

Hearts N' Parks began as pilot programs in North Carolina in 1999 and in Arlington County, VA, in 2000. Hearts N' Parks integrated physical activity and education about heart-healthy eating into local community and park and recreation programs for youth and adults. In addition, the pilot sites administered pre- and postquestionnaires to participants to evaluate the effectiveness of their programs. The evaluation showed that participants retained information about heart-healthy behaviors and intended to eat healthier. In addition, children reported learning new physical activities and improving their performance in others; seniors reported feeling healthier and experiencing less pain in their daily lives by the end of the program.

Following the success of the North Carolina and Virginia pilot programs, Hearts N' Parks was significantly expanded in 2002 to encompass local park and recreation community programs at 50 new sites within 10 different States, as well as, 6 sites associated with the U.S. Marine Corps. The 10 States that implemented Hearts N' Parks programs were Arizona, Florida, Georgia, Illinois, Indiana/Ohio, Maryland, Michigan, Missouri, New Mexico, and Nevada. The Marine Corps acted as a de facto Hearts N' Parks "State." The 56 sites, known as Magnet Centers, were selected because of the level of risk of cardiovascular disease in their areas, whether they served

special populations (i.e., seniors or minority populations), and the level of park and recreation agency interest and program capability.

To build program sustainability, Magnet Center sites were required to make a 3-year commitment to Hearts N' Parks and:

- Attend annual trainings for Hearts N' Parks
- Measure program performance by administering pre- and postquestionnaires to participants and by submitting data to NHLBI via a Web-based/database
- Evaluate annually the program's sustainability and growth by tracking additional markers related to the 5 P's of Hearts N' Parks
- Report progress annually
- Utilize an extranet/listserv to communicate to other sites
- Serve as ambassadors/trainers for other sites interested in Hearts N' Parks
- Initiate Hearts N' Parks with one youth and one adult program in the first year and expand heart-healthy programming efforts each consecutive year

In exchange for participating in Hearts N' Parks for 3 years, Magnet Center sites received the following types of support from NHLBI and NRPA: stipends to travel to trainings; NHLBI materials, including the "Hearts N' Parks Community Mobilization Guide" and videotape; program support and technical assistance from project staff; a listserv to be used as a tool to communicate with other sites; an electronic newsletter containing heart health and program information; and access to a newly developed Web-based system to submit performance data and obtain results.

Preparing the Magnet Center Sites

From January through March 2002, NHLBI and NRPA staff held training sessions for Magnet Center personnel and local program partners. Training sessions focused on the 5 P's of Hearts N' Parks: People, Programs and Practices, Public Visibility, Partnering, and Performance Indicators, as described in the "Hearts N' Parks Community Mobilization Guide." Participants received a guide, as well as additional NHLBI materials, and discussed how to start a program, target at-risk groups for participation, gain community support through the media and community leaders, build programs through partnering, and make programs fun and educational. Participants also received instruction on how to administer the three types of pre- and postprogram performance instruments (survey questionnaires) that corresponded to child, adolescent, or adult programs. These questionnaires are found in the "Hearts N' Parks Community Mobilization Guide." In addition, Magnet Center personnel learned how to submit program data after compiling it at the program site into a Web-based tracking and reporting system. To ensure that site personnel were able to submit program data successfully, a posttraining exercise was developed, in which sites completed and submitted the assignment via a new Web-based system.

Report Format

The analysis of pretest and posttest data from Hearts N' Parks sites is provided in three chapters. Chapter IV presents the results for the entire program, subdivided by child, adolescent, and adult data, including demographic data, performance scores, significance test results, and interpretation. Chapter V provides the same type of results as the first, but is broken down by State and includes only those States for which multiple-site data are available. Chapter VI presents the results for each individual program at the Magnet Centers.

Chapter VII of this report describes the methods and results of the principal components analysis (factor analysis) conducted using the three datasets (child, adolescent, and adult). This procedure provides a framework for determining the validity of the scale-based questionnaire sections as measurements of specific attitude and behavioral constructs. (A more complete explanation of factor analysis is explained in chapter VII.)

The report concludes in chapter VIII with an overall assessment of the program based on the three levels of analysis, describing which age groups, States, and Magnet Center sites achieved the greatest success in meeting the performance objectives stated in the Introduction. The conclusion also includes a discussion of ways to improve data collection and quality, results of the factor analysis, and recommendations for improving the program's performance in the future.

Finally, an appendix at the end of the report details the overall scores for each question answered in each of the three questionnaires in both pretest and posttest. That is, for each individual item within each pre- and posttest questionnaire, the appendix lists the total number of participants who responded to that item (whether they completed both pretest and posttest or not), the average score of that item, and the standard deviation of the scores.

III. Methodology

Data Collection

Three different questionnaires functioned as primary data collection instruments to assess the performance of the Hearts N' Parks programs. The questionnaires were included as reproducible pages in the "Hearts N' Parks Community Mobilization Guide." The three questionnaires applied specifically to child, adolescent, and adult programs, and they were administered before and after participants completed their programs (i.e., as pretests and posttests). The questionnaires focused on two program target areas: heart-healthy eating and physical activity. They are subdivided into sections that query participants about their knowledge, attitudes, behavior, and/or intention in these target areas. The adolescent and adult questionnaires also contained questions related to knowledge and attitude regarding the risks of overweight and obesity, which falls within the target area of heart-healthy eating. The adult questionnaire included two additional target areas that were not included in the child and adolescent questionnaires: causes of high blood pressure and actions to control high cholesterol. Participants in all age groups were evaluated for pretest-to-posttest improvement in knowledge, attitude, and/or behavior from pretest to posttest according to the specific sections within their questionnaires.

A new, Web-based data-collection system was created for the 2002 Hearts N' Parks program that allowed Magnet Centers to register their programs, obtain spreadsheet templates, and submit program-performance data directly to staff through a secure NHLBI Web site. Once site personnel logged onto the "Hearts N' Parks Tracking and Reporting Web Site," they registered their program and provided the program name, location, dates of activity, age group of participants, and program target areas (e.g., physical activity, heart-healthy eating). They then downloaded one of three spreadsheets (one for each child, adolescent, or adult program) formatted specifically for each type of questionnaire. After they entered their participants' pre- and posttest responses into the spreadsheets, they uploaded them back into the Hearts N' Parks Web site or e-mailed them to project staff as needed, where they were processed and compiled in a Statistical Analysis Software (SAS) database for comprehensive analysis.

The new Web-based tracking system also was designed to provide program sites with immediate results of their participants' performance measures, based on the data from the spreadsheets they submitted.

As of February 2003, pre- and posttest performance data from 68 programs (34 child, 8 adolescent, and 26 adult) across 36 Magnet Centers were submitted to the tracking and reporting Web site.

Twenty Magnet Centers did not submit data in 2002 because of the following circumstances:

- Some programs started late and would be completing their programs in 2003; therefore, data could not be analyzed.

- Budget cuts forced some Magnet Centers to alter or halt their programs.

- Some Magnet Centers lacked an adequate amount of staff necessary to collect and enter performance data.

- Some Magnet Center personnel misinterpreted the timeline for data submission and thus were not prepared to submit data on time.

- A few Magnet Centers were waiting for a new recreation facility to open before they could implement programs.

Data Quality

Training sessions and the posttraining exercise assignment helped to facilitate the data-entry and submission process. Although restrictions built into the spreadsheets—such as rejecting false answers (i.e., values lying outside a specified range or misspelled words) and matching pre- and posttest identification numbers automatically—reduced the amount of time necessary for data cleaning, the raw data still required a moderate amount of cleaning. This was the result of a number of factors: data-entry issues at the site level (such as the failure to check key section boxes and corrupting spreadsheets by cutting and pasting answers), the need to reformat some of the spreadsheets due to site computer difficulties or incompatible software, and confusion of site staff over how to handle pre- versus posttest data.

Other minor problems had to be resolved before the analysis could be conducted. First, some of the numbers entered into spreadsheets to represent the amount of time adults spent doing various physical activities were obviously erroneous (e.g., a participant who did 10 hours of pushups in one day). Phoning or e-mailing the appropriate sites to obtain the correct values rectified this problem easily.

One unanticipated limitation of the data was that a number of participants in various programs did not complete both the pretest and posttest for a given program. Some programs experienced high attrition rates, while others gained participants after the pretests were administered. Thus, a large number of participants' performance measures cannot be analyzed for pretest-to-posttest changes.

Finally, some children did not complete all questions in a particular section of the child questionnaire. In cases in which a child completed fewer than half the questions of a given section at pretest or posttest, his or her score for that section was not counted. If, however, most but not all of the questions were answered, the section score for that participant was calculated as the average of the answers given. Missing responses did not affect participant's scores negatively.

In the analysis tables that follow, the sample size for each group "N" represents the number of participants who completed both pretest and posttest questionnaires. For all other sections, however, pretest-to-posttest improvement is indicated in bold type (**YES** instead of YES) if the score increase is *statistically significant at the .05 level* ($p < .05$, 95 percent confidence interval), based on matched-pairs T-tests of significance.

IV. Analysis of Overall Program Data

Children

Magnet Centers

Twenty-eight Magnet Centers submitted pretest and posttest data for analysis of 34 child programs. A total of 1,232 children participated in these programs. Twenty-six of the 34 programs were summer camps; 8 were after-school programs that occurred in the spring and fall. Children's programs lasted between 30 and 74 days. The average length was 51 days, or just over 7 weeks.

Magnet Center Children's Programs

State	Magnet Center	Program	Number of Participants*
Florida	Tamarac	Youth Summer Shape-Up	18
	Largo (3)	Kid City	29
		Hero's Camp	70
		Cool Kids	34
	Lee County	Schandler Hall Summer Camp	47
	Oldsmar	Summer Camp	26
Georgia	Savannah	Kids Camps	62
Illinois	Homewood	Extra Innings	17
	Urbana	Sports Camp	24
	Rockford	21st Century	63
Indiana/Ohio	Bloomington	Kid City Sports	23
	Gary	Kids Learn 2 Live	16
	Lafayette	McAllister Day Camp	51
	South Bend (2)	Summer Fun Learning Camp	44
		Kids World	62
	Bowling Green	Summer Day Camp	3
Michigan	Adrian	Summer Playground	13
	Meridian Township	Playground Program	10
	Monroe	Summer Camp—ALCC '02	28
	Muskegon	Playground Program	30
Missouri	Jefferson City	Start Smart Baseball	60
	Kansas City	Operation READY	20
	Springfield	McBride Day Camp	17
	Des Peres	Camp Des Peres	18
	Poplar Bluff	Wall Walk	44
Nevada	Clark County	Desert Breeze	10
	Henderson	Kids Zone	34
	Las Vegas	Kids Kamp	197
New Mexico	Albuquerque (2)	Wellness/After-school (Physical Activity)	7
		Wellness/After-school (Healthy Eating)	9
	Rio Rancho (3)	Sportz Camp—Haynes	86
		Sportz Camp—Colinas	10
		Sportz Camp—Star Heights	29
US Marine Corps (USMC)	Cherry Point	School Age Care (SAC) Program	21

*This number represents the total number of participants for whom pretest and/or posttest data were submitted, not the number who completed both pre- and posttests.

Child Questionnaire

The children's questionnaire first asks the child's gender and age category, and then covers five heart health sections. The first four are identical in pretest and posttest; however, the last section's pre- and posttest formats are not identical.

Heart-Healthy Eating Knowledge (7 questions): Under the heading "Which food is better for your health?" this section asks children to choose the healthier of two foods for each question. Scores are presented as the percentage of questions answered correctly.

Heart-Healthy Eating Behavior (7 questions): Under the heading "What foods do you eat most of the time?" this section asks children to mark for each question which of two foods they eat more often. Scores are presented as the percentage of questions in which participants chose the healthier food.

Heart-Healthy Eating Intention (7 questions): Under the heading "What would you do?" this section asks children to identify which of two foods they *would* eat in a given circumstance (e.g., at the movies, for a snack, on a hamburger). Scores are presented as the percentage of questions in which participants chose the healthier food.

Things I Like and Things I Do (pretest only): This section consists of a table with 14 rows listing different types of physical activity (jump rope, soccer, swimming, etc.) and the following three column headings: "I like to do this," "I've done this in the past week," and "I would like to learn how to do this." Scores are measured in two ways:

(1) The percentage of children who marked each activity under each heading and

(2) The average number of activities marked in each column

This section measures children's self-reported interest and involvement in physical activity.

Things I Learned and Did This Summer (posttest only): This section is identical to the previous one in format, and the activity rows are the same; however, the column headings are switched to "Something new I learned," "I got better at this," and "I would like to play this again." Scores are presented in the same way as "Things I Like and Things I Do." This section seeks to determine the kinds of physical activity that children learned and enjoyed and are interested in doing again after completing their programs.

Note: For overall children's results (34 programs), "Things I Like and Things I Do" and "Things I Learned and Did This Summer" are initially presented activity-by-activity on pg. 12–13. For simplicity, the results of these sections are presented thereafter in tables that show the average number of activities checked under each heading, without breaking down all 14 activities beneath those headings.

Physical Activity Attitude (6 questions): Under the heading "Physical Activity and You!" this section measures children's attitudes toward physical activity on a scale of 0–12 (6 questions; 0–2 points per question; higher score is favorable).

Age and Gender Distribution

As the tables below show, nearly 70 percent of children were between 8 and 11 years of age. The largest age group was 10 to 11 years of age. More than half of the participants were boys.

Age

	Frequency	Percent
Under 6 years	114	9.7%
6 or 7 years	255	21.6%
8 or 9 years	395	33.5%
10 or 11 years	415	35.2%
Total	**1,179**	**100%**
Not Given	53	

Gender

	Frequency	Percent
Girl	538	44.6%
Boy	667	55.4%
Total	**1,205**	**100%**
Not Given	27	

Performance Scores and Significance Tests

Children's scores (see the following table) increased significantly from pretest to posttest in every section in which significance tests are possible: the heart-healthy eating knowledge, behavior and intention sections, and physical activity attitude. Although the posttest score for "Heart-Healthy Eating Knowledge" is high (82 percent), children's posttest scores on sections regarding eating behavior and intention show more room for improvement. When given a choice between eating an unhealthy food and a similar but healthier substitute, children at posttest said they tend to make the healthier choice (62 percent of the time, on average). Similarly, their *intention* to make a healthy eating choice when provided specific circumstances was indicated in 63 percent of posttest questions, on average. Nevertheless, these results strongly suggest that after participating in Hearts N' Parks, children had significantly improved their knowledge of heart-healthy eating, their current eating behavior, their intention to make healthy eating choices in the future, and their attitude toward physical activity.

At the beginning of the program, in the section entitled "Things I Like and Things I Do," children checked off things from a list of 14 activities that they like to do, that they've done in the past week, and that they'd like to learn how to do. On average, children checked off 9 activities out of the 14 that they "like to do;" the activities cited most frequently were swimming, games (e.g., tag, and hopscotch), and biking. For things they've "done" in the past week, they averaged over 4 activities, with exercises (e.g., jumping jacks), games, and swimming the most common. Activities they "would like to learn"—led by football, tennis, and volleyball—garnered the fewest checks, an average of 2.6 per child.

At the end of the program, children checked off activities from the same list, but with an adjusted format from the pretest, entitled "Things I Learned and Did This Summer." The questionnaire instructed children to check off activities that they "learned," activities at which they "got better," and activities in which they "would like to play again." They checked off an average of five activities "learned" by the end of the program. The distribution of activities learned was

wide; each one was checked off between 32 percent and 39 percent of the time. Under activities that children said they "got better at," the average was 6.9 per respondent. "Exercises" was by far the most commonly cited item in this group. Finally, children listed 5.7 activities (on average) that they would like to play again. The most common of these, by a wide margin, was "games."

Children: 34 Programs

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	789	74.3%	81.8%	**YES**
Heart-Healthy Eating Behavior	% Healthy	783	48.1%	62.3%	**YES**
Heart-Healthy Eating Intention	% Healthy	832	43.9%	62.9%	**YES**
Physical Activity Attitude	0–12	872	8.91	9.15	**YES**

Things I Like and Things I Do: N=824

(PRE)	I Like To Do This	I've Done This in the Past Week	I Would Like To Learn How To Do This
Softball/Baseball	63.2%	26.3%	22.1%
Basketball	67.6%	35.4%	19.1%
Biking	75.4%	32.2%	11.5%
Bowling	70.6%	22.5%	16.0%
Dancing	48.5%	29.1%	21.4%
Exercises	66.1%	49.5%	9.5%
Football	53.8%	25.2%	27.1%
Games	76.8%	45.1%	12.0%
Jump rope	62.1%	34.1%	16.9%
Rollerskating	67.0%	25.0%	19.1%
Soccer	65.8%	29.7%	18.3%
Swimming	77.7%	40.9%	13.1%
Tennis	50.2%	21.6%	29.7%
Volleyball	53.0%	23.5%	28.6%
Average Number of Activities Per Person	**8.98**	**4.40**	**2.64**

Things I Learned and Did This Summer: N=824

(POST)	Something New I Learned	I Got Better at This	I Would Like To Play This Again
Softball/Baseball	38.3%	51.3%	38.0%
Basketball	35.2%	54.4%	45.4%
Biking	32.3%	46.0%	41.6%
Bowling	35.7%	50.5%	39.0%
Dancing	33.1%	40.8%	30.0%
Exercises	37.0%	64.7%	37.9%

(POST)	Something New I Learned	I Got Better at This	I Would Like To Play This Again
Football	31.9%	47.0%	41.7%
Games	39.8%	54.9%	68.6%
Jump rope	34.8%	55.9%	38.3%
Rollerskating	33.0%	46.4%	38.8%
Soccer	36.7%	52.3%	41.6%
Swimming	39.2%	51.2%	40.4%
Tennis	37.9%	46.4%	33.1%
Volleyball	38.7%	31.3%	33.7%
Average Number of Activities Per Person	**5.04**	**6.93**	**5.68**

Child Results, by Gender

When the children's data were separated by gender (following tables), we see that girls scored better than boys on pre- and posttest heart-healthy eating knowledge, behavior, and intention. Boys, however, produced higher physical activity attitude scores in pretest and posttest. Both genders showed significant improvement in all sections, with the exception of physical activity attitude among girls.

Children: Boys

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	444	73.0%	80.8%	**YES**
Heart-Healthy Eating Behavior	% Healthy	447	44.5%	60.6%	**YES**
Heart-Healthy Eating Intention	% Healthy	473	41.5%	61.3%	**YES**
Physical Activity Attitude	0–12	490	9.11	9.32	**YES**

Children: Girls

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	343	76.0%	83.2%	**YES**
Heart-Healthy Eating Behavior	% Healthy	333	52.8%	64.3%	**YES**
Heart-Healthy Eating Intention	% Healthy	357	47.1%	64.9%	**YES**
Physical Activity Attitude	0–12	374	8.63	8.90	YES

In the following two tables, which display the average number of activities marked in the sections "Things I Like and Things I Do" and "Things I Learned and Did This Summer," there are no significant differences between boys' and girls' scores, based on an analysis of variance (ANOVA) between the two groups. This demonstrates that the difference between boys' and girls' activity interests, in terms of numbers of activities that they liked and did before the program (Pre Mean) and that they learned and did at the end of the program (Post Mean), was

small. (The "N" column represents the numbers of boys and girls who completed both sections of "Things I Like . . . /Things I Learned . . . .")

Children: Boys

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	465	9.12	
I have done this in the past week	# Activities	465	4.43	
I would like to learn how to do this	# Activities	465	2.50	
Something new I learned	# Activities	465		5.12
I got better at this	# Activities	465		6.86
I would like to play this again	# Activities	465		5.48

Children: Girls

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	351	8.78	
I have done this in the past week	# Activities	351	4.30	
I would like to learn how to do this	# Activities	351	2.81	
Something new I learned	# Activities	351		4.81
I got better at this	# Activities	351		6.92
I would like to play this again	# Activities	351		5.98

Child Results, by Age

This analysis compares the results of surveys of younger children (9 years and younger) with those of older children (10–11 years of age) as a way to observe whether Hearts N' Parks was more beneficial to one age group than another. The two groups' results are compared in the following tables. The older group scored far higher in heart-healthy eating knowledge and physical activity attitude, but lower in heart-healthy eating behavior and intention. Nevertheless, the results show that the 9-and-younger age group made significant improvements alongside the 10–11 year age group—and even greater improvement in physical activity attitude—demonstrating that younger and older kids were similarly capable of learning about heart-healthy eating.

Children: 10–11 Years of Age

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	297	80.7%	87.0%	**YES**
Heart-Healthy Eating Behavior	% Healthy	280	47.2%	61.1%	**YES**
Heart-Healthy Eating Intention	% Healthy	305	44.1%	61.4%	**YES**
Physical Activity Attitude	0–12	300	9.20	9.29	YES

Children: 9 Years and Younger

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	485	70.2%	78.5%	**YES**
Heart-Healthy Eating Behavior	% Healthy	494	48.4%	62.9%	**YES**
Heart-Healthy Eating Intention	% Healthy	520	43.6%	63.8%	**YES**
Physical Activity Attitude	0–12	543	8.74	9.06	**YES**

In the two following tables, which display the average number of activities marked in the sections "Things I Like and Things I Do" and "Things I Learned and Did This Summer," there are some significant differences between younger and older children's scores, based on ANOVA between the two groups. Specifically, children 9 and younger listed significantly more activities that they had "done . . . in the past week," "would like to learn how to do," and that were "something new I learned." The older children, however, listed significantly more activities that they "would like to play again."

Note: "Pre Mean" represents the average number of activities marked for the pretest section items; "Post Mean" represents the average for the posttest items. These pre- and posttest items are not identical measures and therefore cannot be directly compared. The "N" column represents the number of children in each age group who completed "Things I Like . . . /Things I Learned . . . ."

Children: 10–11 Years of Age

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	284	8.72	
I have done this in the past week	# Activities	284	3.94	
I would like to learn how to do this	# Activities	284	1.88	
Something new I learned	# Activities	284		4.20
I got better at this	# Activities	284		6.37
I would like to play this again	# Activities	284		6.11

Children: 9 and Younger

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	511	9.07	
I have done this in the past week	# Activities	511	4.53	
I would like to learn how to do this	# Activities	511	3.04	
Something new I learned	# Activities	511		5.27
I got better at this	# Activities	511		6.98
I would like to play this again	# Activities	511		5.51

Child Programs With Dietitians

The following seven child programs brought in professional dietitians to help educate their participants in heart-healthy eating:

- Lee County (FL)—Schandler Hall Summer Camp
- Urbana (IL)—Sports Camp
- Lafayette (IN)—McAllister Day Camp
- South Bend (IN)—Kids World
- Meridian Township (MI)—Playground Program
- Monroe (MI)—Summer Camp (ALCC '02)
- Albuquerque (NM)—Wellness/After-school (Healthy Eating only)

The heart-healthy eating scores of this group of programs were compared to the scores of all other child programs. Programs that used dietitians did not attain significantly higher scores or show greater improvement in heart-healthy eating knowledge, behavior, or intention scores than all other programs.

Children: Programs With Dietitians

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	168	74.3%	83.5%	**YES**
Heart-Healthy Eating Behavior	% Healthy	168	45.0%	54.6%	**YES**
Heart-Healthy Eating Intention	% Healthy	168	43.1%	52.8%	**YES**

Children: Programs Without Dietitians

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	611	74.4%	81.5%	**YES**
Heart-Healthy Eating Behavior	% Healthy	605	49.2%	64.9%	**YES**
Heart-Healthy Eating Intention	% Healthy	654	44.5%	66.0%	**YES**

Adolescents

Magnet Centers

Seven Magnet Centers submitted pretest and posttest data for analysis of eight adolescent programs. A total of 156 adolescents participated in these programs. Four of the eight programs

were summer camps, and three were after-school programs. The remaining program, Glendale (AZ) Realize Productions, represented a departure from these two general types of programs.

Designed specifically for at-risk youths, Realize Productions taught adolescents how to express—through dance, drama, and the visual arts—the problems that they deal with and how heart-healthy eating and physical activity could contribute to their personal growth.

The average length of adolescent programs was 75 days. Realize Productions, at Glendale, AZ, ran for nearly 5 months (from May through September), but all others ran for 7 to 11 weeks.

Magnet Center Adolescent Programs

State	Magnet Center	Program	Number of Participants*
Arizona	Glendale	Realize Productions	32
Florida	Lee County	Schandler Teen Camp	23
Illinois	Decatur	Teen Summer Camp	9
Maryland	Montgomery County	Rocky Hill	18
	Queen Anne County	After-School program (Sudlersville)	7
		After-School program (Centreville)	23
Michigan	Muskegon	Playground Program	13
New Mexico	Rio Rancho	Higher Ground	31

*This number represents the total number of participants for whom pretest and/or posttest data were submitted, not the number that completed both pre- and posttests.

Adolescent Questionnaire

The adolescent questionnaire first asked the participant's gender and age category and then covered seven sections on heart health. The pretest and posttest were identical.

Heart-Healthy Eating Knowledge (12 questions): The first 4 questions test knowledge of food groups and proper diet. The last 8 questions, under the heading "Which food is better for your health?" ask adolescents to choose the healthier of two foods for each question. Scores are presented as the percentage of questions answered correctly.

Overweight/Obesity Knowledge (9 questions): This section is in true/false format, where adolescents must decide whether each statement concerning overweight/obesity risks and facts is true or false. Scores are based on the percentage of questions answered correctly.

Heart-Healthy Eating Attitude (10 questions): This section is based on a 4-point agree/disagree scale, which the respondent uses to indicate how much he or she agrees with each statement expressing a positive attitude toward healthy eating. Section scores represent the average of all questions on a 1-to-4-point scale, in which 4 is the best possible score ("strongly agree") and 1 is the worst score ("strongly disagree").

Overweight/Obesity Attitude (8 questions): This section is based on a 4-point agree/disagree scale, which measures respondents' attitude toward overweight or obesity. A score of 4 represents the healthiest attitude.

Heart-Healthy Eating Behavior (8 questions): Under the heading "What foods do you eat most of the time?" this section asks adolescents to mark which of two foods they eat most often. Scores are presented as the percentage of questions in which participants chose the healthier food.

Heart-Healthy Eating Intention (8 questions): Under the heading "What would you do?" this section asks adolescents to identify which of two foods they would eat in a given circumstance (e.g., at the movies, for a snack, on a hamburger). Scores are presented as the percentage of questions in which participants chose the healthier food.

Physical Activity Level (5 questions): This section measures the level of physical activity in which adolescents have engaged, based on time spent exercising and playing sports. Scores are based on a 0-to-6-point scale, in which 6 is the best score.

Age and Gender Distribution

Age

	Frequency	Percent
12 or 13 years	92	73.0%
14 or 15 years	27	21.4%
16 or 17 years	5	4.0%
18 years or over	2	1.6%
Total	**126**	**100%**
Not Given	30	

Gender

	Frequency	Percent
Boy	76	49.4%
Girl	78	50.6%
Total	**154**	**100%**
Not Given	2	

Performance Results

The following table displays the overall results of the eight adolescent programs. Four out of seven section scores improved significantly from pretest to posttest. The section showing the most improvement among adolescents is "Heart-Healthy Eating Behavior," which improved by approximately 20 percentage points. "Heart-Healthy Eating Intention" also showed significant improvement (15 percentage points), followed by "Overweight/Obesity Knowledge (7 points)." "Healthy Eating Attitude" also showed improvement, with posttest scores close to 3. This indicates that most participants agreed with statements expressing a positive self-attitude toward healthy eating. Adolescents' self-reported levels of physical activity and their "Heart-Healthy

Eating Knowledge" increased slightly, although the knowledge scores already were fairly high at pretest.

Adolescents: All Eight Programs

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	92	74.6%	77.6%	YES
Overweight/Obesity Knowledge	% Correct	83	61.8%	68.9%	**YES**
Heart-Healthy Eating Attitude	1–4	93	2.63	2.93	**YES**
Overweight/Obesity Attitude	1–4	91	2.52	2.34	NO
Heart-Healthy Eating Behavior	% Healthy	89	36.4%	56.1%	**YES**
Heart-Healthy Eating Intention	% Healthy	91	44.6%	60.0%	**YES**
Physical Activity Level	0–6	91	3.45	3.75	YES

Adolescents' Results, by Gender

When adolescent performance results were sorted by gender, there were some obvious differences between boys' and girls' results. Girls earned higher scores than boys in the posttest of every section. They also made significant improvement in the "Overweight/Obesity Knowledge" section; however, boys did not.

Adolescent: Boys

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	51	71.7%	75.6%	YES
Overweight/Obesity Knowledge	% Correct	49	63.7%	67.7%	YES
Heart-Healthy Eating Attitude	1–4	52	2.57	2.85	**YES**
Overweight/Obesity Attitude	1–4	50	2.51	2.32	NO
Heart-Healthy Eating Behavior	% Healthy	48	37.5%	54.5%	**YES**
Heart-Healthy Eating Intention	% Healthy	50	39.8%	57.4%	**YES**
Physical Activity Level	0–6	50	3.48	3.66	YES

Adolescent: Girls

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	41	78.2%	80.1%	YES
Overweight/Obesity Knowledge	% Correct	34	59.1%	70.5%	**YES**
Heart-Healthy Eating Attitude	1–4	41	2.71	3.04	**YES**
Overweight/Obesity Attitude	1–4	41	2.54	2.38	NO
Heart-Healthy Eating Behavior	% Healthy	41	35.1%	57.9%	**YES**
Heart-Healthy Eating Intention	% Healthy	41	50.4%	63.1%	**YES**
Physical Activity Level	0–6	41	3.41	3.85	YES

Adolescents' Results, by Age

Separating adolescents into two age groups—12–13 years old and older than 13 years—we see that the older group made somewhat greater improvement from pretest to posttest and scored higher in most sections. Nevertheless, both groups showed improvement in the same sections, with the exception of "Overweight/Obesity Knowledge," where the score of the older-than-13 age group increased 13 percentage points and that of the 12–13-year age group score increased by fewer than four points.

Adolescents: 12–13 Years of Age

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	62	74.2%	75.3%	YES
Overweight/Obesity Knowledge	% Correct	54	63.7%	67.2%	YES
Heart-Healthy Eating Attitude	1–4	63	2.69	2.91	**YES**
Overweight/Obesity Attitude	1–4	61	2.54	2.48	NO
Heart-Healthy Eating Behavior	% Healthy	59	37.1%	54.4%	**YES**
Heart-Healthy Eating Intention	% Healthy	61	42.0%	56.7%	**YES**
Physical Activity Level	0–6	61	3.25	3.62	YES

Adolescents: 14 Years and Older

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	28	75.4%	81.8%	YES
Overweight/Obesity Knowledge	% Correct	28	58.3%	71.7%	**YES**
Heart-Healthy Eating Attitude	1–4	28	2.49	2.98	**YES**
Overweight/Obesity Attitude	1–4	28	2.46	1.99	NO
Heart-Healthy Eating Behavior	% Healthy	28	35.8%	60.1%	**YES**
Heart-Healthy Eating Intention	% Healthy	28	48.2%	66.7%	**YES**
Physical Activity Level	0–6	28	3.96	4.00	YES

Adolescent Programs With Dietitians

Three adolescent programs brought in professional dietitians to help educate their participants in heart-healthy eating:

- Glendale (AZ)—Realize Productions
- Queen Anne County (MD)—After-School Program (Sudlersville)
- Lee County (FL)—Schandler Teen Camp

In the sections entitled "Overweight/Obesity Knowledge" and "Heart-Healthy Eating Intention," the heart-healthy eating scores of this group of programs were compared to the scores of all other

adolescent programs. Programs that used dietitians attained significantly higher scores and made greater improvement than programs that did not use them. ANOVA showed no significant difference between groups in the other four questionnaire sections.

Adolescents: Programs With Dietitians

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	49	72.5%	76.9%	YES
Overweight/Obesity Knowledge	% Correct	44	61.4%	73.7%	**YES**
Heart-Healthy Eating Attitude	1–4	49	2.55	2.96	**YES**
Overweight/Obesity Attitude	1–4	49	2.44	2.10	NO
Heart-Healthy Eating Behavior	% Healthy	49	39.3%	60.7%	**YES**
Heart-Healthy Eating Intention	% Healthy	49	48.2%	66.3%	**YES**

Adolescents: Programs Without Dietitians

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	40	77.8%	78.5%	YES
Overweight/Obesity Knowledge	% Correct	39	62.3%	63.4%	YES
Heart-Healthy Eating Attitude	1–4	41	2.70	2.89	**YES**
Overweight/Obesity Attitude	1–4	39	2.64	2.61	NO
Heart-Healthy Eating Behavior	% Healthy	37	32.2%	51.4%	**YES**
Heart-Healthy Eating Intention	% Healthy	39	39.1%	53.1%	**YES**

Adults

Magnet Centers

Twenty-three Magnet Centers submitted pretest and posttest data for analysis of 26 adult programs. A total of 531 adults participated in these programs. Ten of the 26 programs were senior programs; 7 were city employee programs (usually parks and recreation department staff); 8 were general park and recreation programs; and 1 program, at Poplar Bluff (MO), served disabled persons.

The average length of adult programs was 84 days; however, the median program length was 57 days. The average length is skewed because of programs at Green County (OH), Lafayette (IN), and Elyria (IN) that ran for 6 to 9 months. The Indiana/Ohio programs generally ran longer than those of other States. Overall, approximately half the programs ran primarily during the summer months, the other half during the spring and fall.

Magnet Center Adult Programs

State	Magnet Center	Program	Number of Participants*
Florida	Oldsmar	Employee Lunch-time Walking	16
Georgia	Savannah	Golden Age Program	44
Illinois	Homewood	Prime Time Fitness	18
	Rockford	Senior Hour	10
	Urbana	Parkland	21
Indiana/Ohio	Bloomington	City of Bloomington Employee Program	46
	Elyria	The Active People	20
	Greene Co.	Sportfitness	9
	Lafayette	Park Staff	43
	South Bend (2)	City Employee	9
		Healthy Seniors for Life	14
Maryland	Baltimore	Healthy Living	31
	Montgomery Co.	Senior Program	11
	Queen Anne Co.	Walk Across Maryland	59
Michigan	Muskegon	Tai Chi	8
Missouri	Des Peres	Wake Up and Work Out	15
	Jefferson City	City Survivor Challenge	35
	Poplar Bluff	Arthritis Aquatics	13
	Springfield (2)	Cox Healthy Lifestyles 1	14
		Cox Healthy Lifestyles 2	15
Nevada	Henderson	SMILE	4
	Las Vegas	Leisure Services Staff Walk Across America	44
New Mexico	Albuquerque	HNP Wellness Adult	4
	Roswell (2)	Sofae	11
		Summer Fun Fitness	8
USMC (NC)	Cherry Point	Water Aerobics	9

*This number represents the total number of participants for whom pretest and/or posttest data were submitted, not the number that completed both pre- and posttests.

Adult Questionnaire

The first four questions of the adult questionnaire ask the respondent's gender, age group, race, and level of education. Twelve different substantive sections follow. The pretest and posttest are identical.

Heart-Healthy Eating Knowledge (6 questions): This section is composed of a series of multiple-choice questions that test respondents' knowledge of proper serving sizes and low-fat diets. Scores represent the percentage of questions answered correctly.

Overweight/Obesity Knowledge (9 questions): A series of true/false questions comprise this section. Adults must decide whether each statement concerning overweight/obesity risks and facts is true or false. Scores are based on the percentage of questions answered correctly.

Heart-Healthy Eating Attitude (6 questions): This section is based on a 4-point importance scale ("very," "somewhat," "not too," or "not at all important"), which the respondent uses to indicate how important each of the six healthy eating habits is to him/her. Section scores represent the average of all questions on a 1-to-4-point scale, in which 4 is the best possible score.

Overweight/Obesity Attitude (8 questions): This section is based on a 4-point agree/disagree scale, which reflects a person's predisposition for overweight or obesity. A score of 4 represents the healthiest attitude toward achieving a healthy weight.

Heart-Healthy Eating Behavior (7 questions): This section measures the frequency with which adults make healthy eating choices, such as "low-calorie instead of regular salad dressing." Scores are based on a 0–4 point scale, in which 0 equals "never" and 4 equals "almost always."

Physical Activity Level (7 questions): The questions in this section are designed to measure adults' participation in physical activity, based on past, current, and future levels of activity, plus group activities (e.g., classes, leagues). The maximum number of points achievable in this section is 12.

Physical Activity Attitude (14 questions): The questions in this section are designed to measure how likely respondents are to give excuses for not exercising, based on a 1–4 scale (in which 1 equals "very likely" and 4 equals "very unlikely").

Physical Activity Knowledge (12 questions): The questions in this section are designed to measure respondents' knowledge of the need for physical activity as well as the risks that come with it. Answers are either true or false, and section scores are based on the percentage of correct answers.

High Blood Pressure Knowledge (14 questions): The questions in this section are designed to measure adults' ability to identify the causes of high blood pressure (HBP). The section score represents the percentage of items that the respondents correctly identified as either a cause or not a cause of HBP.

Cholesterol Knowledge (12 questions): The questions in this section are designed to measure adults' ability to identify proper actions to control high blood cholesterol. The section scores represent the percentage of items that the respondents correctly identified as something that either would or would not help control blood cholesterol.

FIT Score: The questions in this section are intended to measure the number of hours adults engaged in each of 14 different types of physical activity over the last 7 days and adds them up to produce the "FIT Score." A group FIT Score is simply the average among those who reported both pre- and post-FIT Scores.

SIT Score: This section measures the number of inactive hours spent engaging in each of five different activities (e.g., watching TV, reading, using a computer) over the last 7 days and adds them up to produce the "SIT Score." A group SIT Score is simply the average among those who reported both pre- and post-SIT Scores.

Age, Gender, Race, and Education Distribution

Although the largest adult age group surveyed was the older-than-70 group, a wide range of age groups were represented in the sample. Women far outnumbered men, and whites far outnumbered other racial types. More than half of the participants reported having obtained at least some college education, and more than 90 percent were high school graduates.

Age

	Frequency	Percent
Under 21 years	14	2.7%
21–30 years	53	10.1%
31–40 years	67	12.7%
41–50 years	78	14.8%
51–60 years	96	18.2%
61–70 years	88	16.7%
Over 70 years	131	24.9%
Total	**527**	**100%**
Not Given	4	

Gender

	Frequency	Percent
Male	114	21.6%
Female	413	78.4%
Total	**527**	**100%**
Not Given	4	

Race

	Frequency	Percent
White	413	78.4%
African American/Black	83	15.7%
Hispanic	17	3.2%
Asian or Pacific Islander	8	1.5%
American Indian/Alaskan Native	3	0.6%
Other	3	0.6%
Total	**527**	**100%**
Not Given	4	

Education

	Frequency	Percent
Less than high school	48	9.4%
High school graduate	143	27.9%
Some college	140	27.3%
College degree	105	20.5%
Some graduate school	39	7.6%
Graduate degree	38	7.4%
Total	**513**	**100%**
Not Given	18	

Performance Results

As shown in the following table, adult respondents who completed pretests and posttests across all sites demonstrated significant improvement in every section (not including each individual FIT Score and SIT Score activity). Although further improvement still is possible in most areas, adult respondents in general completed their programs with more knowledge about heart-healthy eating, overweight/obesity risks, how to engage in physical activity properly, causes of high blood pressure, and controlling high cholesterol than they had when they started their programs. By the end of the program, respondents on average considered healthy eating habits to be between "somewhat important" and "very important" to them. At posttest, they were significantly less likely to make excuses for not engaging in physical activity. Self-reported physical activity FIT scores suggest that adults were significantly more active and engaged in more physical activity at posttest than at pretest. Posttest data for bicycling, walking, and golf show significant increases. Similarly, adult SIT Scores indicate an average of 8 fewer hours spent inactively (e.g., watching TV). To keep the report at a manageable length, all other adult-results tables provide the total FIT and SIT Scores, and not the individual activities that generate those scores.

Adults: Overall—26 Programs

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	292	61.9%	70.8%	**YES**
Overweight/Obesity Knowledge	% Correct	290	66.0%	72.1%	**YES**
Heart-Healthy Eating Attitude	1–4	289	3.26	3.40	**YES**
Overweight/Obesity Attitude	1–4	292	2.76	2.90	**YES**
Heart-Healthy Eating Behavior	0–4	290	2.14	2.36	**YES**
Physical Activity Level	0–12	324	5.74	6.96	**YES**
Physical Activity Attitude	1–4	315	2.94	3.16	**YES**
Physical Activity Knowledge	% Correct	309	83.9%	90.6%	**YES**
High Blood Pressure Knowledge	% Correct	296	57.4%	64.0%	**YES**
Cholesterol Knowledge	% Correct	290	71.5%	78.0%	**YES**

FIT Score Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
FIT Score	**# hours**	**250**	**7.62**	**9.56**	**YES**
Bicycling	# hours	250	0.12	0.27	**YES**
Bowling	# hours	250	0.11	0.18	YES
Chores	# hours	250	1.73	2.41	YES
Dancing/Aerobics	# hours	250	0.48	0.55	YES
Golf	# hours	250	0.03	0.17	YES
Jogging/Stairs/Treadmill	# hours	250	0.36	0.44	YES
Pushups/Situps	# hours	250	0.20	0.24	YES
Rollerblading, Skating	# hours	250	0.02	0.03	YES
Team or Organized Sports	# hours	250	0.29	0.26	NO

FIT Score Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Walking/Hiking	# hours	250	2.89	3.88	**YES**
Water Sports (Swimming)	# hours	250	0.24	0.24	NO
Weightlifting	# hours	250	0.22	0.32	YES
Winter Sports (Snow Skiing)	# hours	250	0.00	0.03	YES
Other Physical Activities	# hours	250	0.94	0.55	NO

SIT Score Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
SIT Score	**# hours**	**263**	**40.71**	**32.66**	**YES**
TV	# hours	262	15.12	10.63	**YES**
Computer	# hours	262	3.66	3.55	YES
Work (Nonmanual Labor)	# hours	262	15.78	12.74	**YES**
Reading	# hours	262	4.55	4.40	YES
Movies	# hours	261	1.59	1.35	YES

Adult Results, by Gender

Women outnumbered men in Hearts N' Parks programs by a ratio of 3 to 1, so the overall results are weighted heavily by the women's scores. However, when the adult results are sorted by gender (see the following tables), it is evident women achieved higher scores than men in most measures, but not by an overwhelming degree. FIT Score, cholesterol knowledge, and physical activity knowledge and attitude are the only sections in which women's posttest scores did not exceed the men's scores.

Adults: Men

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	64	58.5%	63.3%	YES
Overweight/Obesity Knowledge	% Correct	63	66.5%	72.0%	**YES**
Heart-Healthy Eating Attitude	1–4	63	3.05	3.25	**YES**
Overweight/Obesity Attitude	1–4	65	2.75	2.88	YES
Heart-Healthy Eating Behavior	0–4	63	1.84	2.10	**YES**
Physical Activity Level	0–12	71	6.10	6.89	YES
Physical Activity Attitude	1–4	70	3.00	3.27	**YES**
Physical Activity Knowledge	% Correct	66	82.0%	91.1%	**YES**
High Blood Pressure Knowledge	% Correct	65	54.3%	64.1%	**YES**
Cholesterol Knowledge	% Correct	64	70.7%	78.1%	**YES**
FIT Score	# Hours	52	8.90	12.33	YES
SIT Score	# Hours	57	43.58	30.84	**YES**

Adults: Women

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	228	62.9%	73.0%	**YES**
Overweight/Obesity Knowledge	% Correct	227	65.8%	72.1%	**YES**
Heart-Healthy Eating Attitude	1–4	226	3.32	3.44	**YES**
Overweight/Obesity Attitude	1–4	227	2.76	2.91	**YES**
Heart-Healthy Eating Behavior	0–4	227	2.22	2.43	**YES**
Physical Activity Level	0–12	253	5.64	6.98	**YES**
Physical Activity Attitude	1–4	245	2.92	3.13	**YES**
Physical Activity Knowledge	% Correct	243	84.4%	90.4%	**YES**
High Blood Pressure Knowledge	% Correct	231	58.3%	64.0%	**YES**
Cholesterol Knowledge	% Correct	226	71.8%	78.0%	**YES**
FIT Score	# Hours	198	7.28	8.84	**YES**
SIT Score	# Hours	202	39.12	32.18	**YES**

Adults by Age Group: Seniors Versus Adults 60 and Younger

By separating adults into two age groups—"seniors" (older than 60 years old) and adults 60 and younger (see the following tables)—it is clear that the senior group participants made greater improvement from pretest-to-posttest than did participants 60 years old and younger. In the pretest, the over-60 seniors demonstrated less knowledge in all subjects but similar attitudes toward healthy eating, overweight/obesity, and physical activity. In the posttest, however, the seniors demonstrated a similar grasp of knowledge related to eating, overweight/obesity, physical activity, high blood pressure, and cholesterol compared to the under-60 group. Adults 60 and younger achieved higher FIT Scores than the seniors group but also had higher SIT Scores, due primarily to many more hours spent at work.

Adults: Seniors (Older Than 60)

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	124	56.0%	72.1%	**YES**
Overweight/Obesity Knowledge	% Correct	124	63.2%	73.4%	**YES**
Heart-Healthy Eating Attitude	1–4	123	3.30	3.57	**YES**
Overweight/Obesity Attitude	1–4	124	2.73	2.94	**YES**
Heart-Healthy Eating Behavior	0–4	123	2.17	2.58	**YES**
Physical Activity Level	0–12	143	5.28	7.02	**YES**
Physical Activity Attitude	1–4	134	2.84	3.08	**YES**
Physical Activity Knowledge	% Correct	127	79.4%	89.2%	**YES**
High Blood Pressure Knowledge	% Correct	126	52.6%	66.5%	**YES**
Cholesterol Knowledge	% Correct	125	70.0%	80.0%	**YES**
FIT Score	# Hours	87	5.92	8.61	**YES**
SIT Score	# Hours	86	29.64	19.61	**YES**

Adults: 60 and Younger

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	168	66.3%	70.0%	**YES**
Overweight/Obesity Knowledge	% Correct	166	68.0%	71.1%	**YES**
Heart-Healthy Eating Attitude	1–4	166	3.24	3.28	YES
Overweight/Obesity Attitude	1–4	168	2.78	2.87	**YES**
Heart-Healthy Eating Behavior	0–4	167	2.12	2.19	YES
Physical Activity Level	0–12	181	6.10	6.91	**YES**
Physical Activity Attitude	1–4	181	3.00	3.22	**YES**
Physical Activity Knowledge	% Correct	182	86.9%	91.6%	**YES**
High Blood Pressure Knowledge	% Correct	170	61.0%	62.2%	YES
Cholesterol Knowledge	% Correct	165	72.7%	76.5%	**YES**
FIT Score	# Hours	163	8.53	10.07	YES
SIT Score	# Hours	173	45.31	37.99	**YES**

Adult Results, by Education

When adult scores are sorted into two groups—participants who did not have college-level educations, and participants who had at least some college education (see the following tables)—those with less education made far greater strides in all areas of health knowledge, attitude, and self-reported behavior. At pretest, participants without a college education lagged well behind those who had some college education in nearly all areas of the test. Posttest scores, however, indicate that by the end of their Hearts N' Parks programs, both groups shared a similar grasp of knowledge related to healthy eating, physical activity, high blood pressure, cholesterol, and overweight/obesity, and positive attitudes toward healthy eating and physical activity.

Adults: No College Education

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	120	56.3%	70.8%	**YES**
Overweight/Obesity Knowledge	% Correct	119	62.9%	73.4%	**YES**
Heart-Healthy Eating Attitude	1–4	119	3.27	3.47	**YES**
Overweight/Obesity Attitude	1–4	120	2.69	2.91	**YES**
Heart-Healthy Eating Behavior	0–4	119	2.00	2.40	**YES**
Physical Activity Level	0–12	139	4.91	7.03	**YES**
Physical Activity Attitude	1–4	131	2.71	3.14	**YES**
Physical Activity Knowledge	% Correct	125	75.6%	89.4%	**YES**
High Blood Pressure Knowledge	% Correct	121	50.0%	65.3%	**YES**
Cholesterol Knowledge	% Correct	118	66.7%	77.0%	**YES**
FIT Score	# Hours	89	5.63	9.55	**YES**
SIT Score	# Hours	91	36.52	25.47	**YES**

Adults: Some College Education

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	172	65.8%	70.9%	**YES**
Overweight/Obesity Knowledge	% Correct	171	68.1%	71.1%	**YES**
Heart-Healthy Eating Attitude	1–4	170	3.26	3.35	**YES**
Overweight/Obesity Attitude	1–4	172	2.80	2.89	**YES**
Heart-Healthy Eating Behavior	0–4	171	2.24	2.32	YES
Physical Activity Level	0–12	173	6.45	6.92	**YES**
Physical Activity Attitude	1–4	172	3.12	3.17	YES
Physical Activity Knowledge	% Correct	172	89.3%	91.6%	**YES**
High Blood Pressure Knowledge	% Correct	174	62.6%	63.2%	YES
Cholesterol Knowledge	% Correct	171	74.8%	78.6%	**YES**
FIT Score	# Hours	150	8.74	9.50	YES
SIT Score	# Hours	158	42.90	36.39	**YES**

Adult Programs With Dietitians

The following nine adult programs brought in professional dietitians to help educate their participants in heart-healthy eating:

- Bloomington (IN)—City of Bloomington Employee Program
- Elyria (IN)—The Active People
- Lafayette (IN)—Park Staff
- South Bend (IN)—City Employees
- Baltimore (MD)—Healthy Living
- Queen Anne County (MD)—Walk Across Maryland
- Springfield (MO)—Cox Healthy Lifestyles 2
- Las Vegas (NV)—Leisure Services Staff—Walk Across America
- Roswell (NM)—Summer Fun Fitness

The heart-healthy eating scores of this group of programs were compared to the scores of all other adult programs. ANOVA showed no significant difference in posttest scores between the two groups. However, adult programs with dietitians improved from pre- to posttest more than other programs in the sections entitled “Heart-Healthy Eating Knowledge” and “Heart-Healthy Eating Behavior.”

Adults: Programs With Dietitians

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	148	58.2%	72.6%	**YES**
Overweight/Obesity Knowledge	% Correct	147	64.8%	71.4%	**YES**
Heart-Healthy Eating Attitude	1–4	147	3.20	3.42	**YES**
Overweight/Obesity Attitude	1–4	150	2.71	2.88	**YES**
Heart-Healthy Eating Behavior	0–4	150	1.98	2.33	**YES**
High Blood Pressure Knowledge	% Correct	149	56.9%	65.8%	**YES**
Cholesterol Knowledge	% Correct	146	71.1%	79.7%	**YES**

Adults: Programs Without Dietitians

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	136	66.6%	69.3%	YES
Overweight/Obesity Knowledge	% Correct	135	67.4%	72.6%	**YES**
Heart-Healthy Eating Attitude	1–4	134	3.33	3.38	YES
Overweight/Obesity Attitude	1–4	134	2.81	2.94	**YES**
Heart-Healthy Eating Behavior	0–4	132	2.30	2.38	YES
High Blood Pressure Knowledge	% Correct	139	58.4%	62.3%	**YES**
Cholesterol Knowledge	% Correct	138	72.1%	76.2%	**YES**

V. State-Level Results

In this section, performance results and demographic information for children, adolescents, and adults are provided by State. States that held programs for a specific age group at only one Magnet Center are not included; their results are listed in the following section, which provides performance results for individual programs.

Children, by State

Gender and Age Distribution

Child Gender, by State

State	Boy	Girl	Valid N
FL	58.7%	41.3%	223
GA	59.7%	40.3%	62
IL	51.0%	49.0%	104
IN/OH	56.8%	43.2%	199
MI	50.6%	49.4%	81
MO	57.9%	42.1%	159
NM	47.5%	52.5%	122
NV	56.4%	43.6%	234
USMC	47.6%	52.4%	21
Total	**55.4%**	**44.6%**	**1205**
Not Given			27

Child Age, by State

State	Under 6 years	6–7 years	8–9 years	10–11 years	Valid N
FL	5.9%	20.3%	29.3%	44.6%	222
GA		9.7%	29.0%	61.3%	62
IL	1.9%	37.9%	34.0%	26.2%	103
IN/OH	10.1%	23.6%	33.2%	33.2%	199
MI	3.7%	23.5%	39.5%	33.3%	81
MO	38.4%	7.5%	30.8%	23.3%	159
NM		16.4%	34.5%	49.1%	116
NV	4.6%	28.2%	39.4%	27.8%	216
USMC	23.8%	33.3%	23.8%	19.0%	21
Total	**9.7%**	**21.6%**	**33.5%**	**35.2%**	**1179**
Not Given					53

In Missouri a high percentage of children were younger than 6 years of age, because the Jefferson City, MO, program Start Smart Baseball, included 59 (out of 60) children under the age of 6.

Sites in Florida, Illinois, Indiana/Ohio, Michigan, Missouri, New Mexico, and Nevada implemented multiple children's programs. Their results are presented in this section by State. Georgia and the U.S. Marine Corps (North Carolina) implemented one program each; their results are presented in the Magnet Center section.

Florida

(Magnet Centers: Tamarac, Largo, Lee County, and Oldsmar)

The "Heart-Healthy Eating Knowledge" pretest and posttest scores of Florida participants are among the highest of any State. Significant improvement occurred in heart-healthy eating knowledge, behavior, and intention. Physical activity attitude increased marginally.

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	134	81.4%	87.3%	**YES**
Heart-Healthy Eating Behavior	% Healthy	134	50.1%	56.8%	**YES**
Heart-Healthy Eating Intention	% Healthy	156	47.4%	53.3%	**YES**
Physical Activity Attitude	0–12	146	9.18	9.25	YES

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	143	9.06	
I have done this in the past week	# Activities	143	4.21	
I would like to learn how to do this	# Activities	143	1.89	
Something new I learned	# Activities	143		4.76
I got better at this	# Activities	143		5.71
I would like to play this again	# Activities	143		6.72

Illinois

(Magnet Centers: Homewood, Urbana, and Rockford)

The data indicated that the "Heart-Healthy Eating Behavior" and "Physical Activity Attitude" scores improved significantly. The physical activity attitude scores were among the highest of any State; however, no measurable improvement in "Heart-Healthy Eating Knowledge" was demonstrated.

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	57	69.4%	68.9%	NO
Heart-Healthy Eating Behavior	% Healthy	57	44.7%	55.7%	**YES**
Heart-Healthy Eating Intention	% Healthy	56	48.6%	53.6%	YES
Physical Activity Attitude	0–12	56	8.46	9.63	**YES**

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	60	9.32	
I have done this in the past week	# Activities	60	3.17	
I would like to learn how to do this	# Activities	60	2.48	
Something new I learned	# Activities	60		1.60
I got better at this	# Activities	60		2.78
I would like to play this again	# Activities	60		6.05

Indiana/Ohio

(Magnet Centers: Bloomington, Gary, Lafayette, South Bend, and Bowling Green)

Pretest scores in all sections were very low. Significant posttest improvement occurred in every section with the exception of "Physical Activity Attitude," which decreased slightly. Although attitude scores were lower in Indiana/Ohio than in most other States, Indiana/Ohio children checked off more physical activities that they "got better at" and "would like to play again," in "Things I Learned and Did This Summer" than did children in almost any other State.

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	153	72.2%	76.2%	**YES**
Heart-Healthy Eating Behavior	% Healthy	153	41.8%	49.0%	**YES**
Heart-Healthy Eating Intention	% Healthy	154	35.5%	49.3%	**YES**
Physical Activity Attitude	0–12	164	8.12	8.01	NO

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	145	9.01	
I have done this in the past week	# Activities	145	4.03	
I would like to learn how to do this	# Activities	145	2.54	
Something new I learned	# Activities	145		4.27
I got better at this	# Activities	145		6.45
I would like to play this again	# Activities	145		6.97

Michigan

(Magnet Centers: Adrian, Meridian Township, Monroe, and Muskegon)

Michigan children's posttest eating behavior and intention scores are far higher than those of other States and represent a significant improvement over their own pretest scores.

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	55	71.7%	82.6%	**YES**
Heart-Healthy Eating Behavior	% Healthy	55	46.1%	67.6%	**YES**
Heart-Healthy Eating Intention	% Healthy	55	46.4%	59.5%	**YES**
Physical Activity Attitude	0–12	54	8.80	8.54	NO

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	50	8.70	
I have done this in the past week	# Activities	50	5.94	
I would like to learn how to do this	# Activities	50	3.60	
Something new I learned	# Activities	50		5.92
I got better at this	# Activities	50		5.20
I would like to play this again	# Activities	50		6.64

Missouri

(Magnet Centers: Jefferson City, Springfield, Des Peres, Poplar Bluff, and Kansas City)

Participants demonstrated significant improvement in every section except "Physical Activity Attitude," which increased slightly.

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	120	66.5%	77.3%	**YES**
Heart-Healthy Eating Behavior	% Healthy	86	44.0%	52.2%	**YES**
Heart-Healthy Eating Intention	% Healthy	122	32.9%	60.0%	**YES**
Physical Activity Attitude	0–12	119	9.39	9.75	YES

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	100	6.94	
I have done this in the past week	# Activities	100	3.22	
I would like to learn how to do this	# Activities	100	3.20	
Something new I learned	# Activities	100		1.83
I got better at this	# Activities	100		3.94
I would like to play this again	# Activities	100		4.33

New Mexico

(Magnet Centers: Albuquerque and Rio Rancho)

New Mexico children scored extremely well in each of the first three posttest sections, with significant increases in all. Although there was no improvement in "Physical Activity Attitude," both pretest and posttest scores are high relative to other States.

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	41	80.0%	89.2%	**YES**
Heart-Healthy Eating Behavior	% Healthy	41	53.8%	70.4%	**YES**
Heart-Healthy Eating Intention	% Healthy	41	58.5%	72.3%	**YES**
Physical Activity Attitude	0–12	33	9.97	9.73	NO

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	34	9.88	
I have done this in the past week	# Activities	34	3.82	
I would like to learn how to do this	# Activities	34	2.21	
Something new I learned	# Activities	34		2.97
I got better at this	# Activities	34		4.62
I would like to play this again	# Activities	34		7.21

Nevada

(Magnet Centers: Clark County, Henderson, and Las Vegas)

Nevada's combined data produced higher posttest scores than any other State in "Heart-Healthy Eating Knowledge," "Heart-Healthy Eating Behavior," and "Heart-Healthy Eating Intention," all of which experienced dramatic increases from pretest to posttest. Scores for "Physical Activity Attitude" also improved significantly and were among the highest of any of the statewide scores. Additionally, Nevada children checked off more activities than did children of most States under the sections "Things I like . . . /Things I learned . . ." Of particular note is the average of 11.5 out of 14 activities children reported under the heading "I got better at this" (posttest), by far the highest in any State.

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	162	75.9%	89.3%	**YES**
Heart-Healthy Eating Behavior	% Healthy	190	51.9%	80.2%	**YES**
Heart-Healthy Eating Intention	% Healthy	184	47.0%	87.9%	**YES**
Physical Activity Attitude	0–12	233	9.09	9.64	**YES**

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	228	9.57	
I have done this in the past week	# Activities	228	5.33	
I would like to learn how to do this	# Activities	228	2.78	
Something new I learned	# Activities	228		8.41
I got better at this	# Activities	228		11.56
I would like to play this again	# Activities	228		4.07

Adolescents, by State

Maryland is the only State that implemented multiple adolescent programs. All other States' adolescent program results are presented in the Magnet Center section.

Maryland

Gender

	Frequency	Percent
Male	12	25.0%
Female	36	75.0%
Total	**48**	**100.0%**

Age

	Frequency	Percent
12–13 years	30	88.2%
14–15 years	4	11.8%
Total	**34**	**100.0%**
Not Given	14	

A total of 48 adolescents participated in programs in Queen Anne County and Montgomery County, MD. However, only 16 participants who completed the pretest remained in the programs to complete most posttest sections. A single section, "Heart-Healthy Eating Behavior," shows significant improvement, with a positive change of more than 30 percentage points. Although nominal improvements can be seen in all other areas, none can be considered significant changes because of the small sample and a small pre-post difference.

Adolescents: Maryland

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	16	80.3%	80.5%	YES
Overweight/Obesity Knowledge	% Correct	8	63.9%	66.7%	YES
Heart-Healthy Eating Attitude	1–4	16	2.88	3.10	YES
Overweight/Obesity Attitude	1–4	16	2.58	2.64	YES
Heart-Healthy Eating Behavior	% Healthy	16	39.3%	71.9%	**YES**
Heart-Healthy Eating Intention	% Healthy	16	52.7%	63.4%	YES
Physical Activity Level	0–6	16	2.56	3.25	YES

Adults, by State

Demographics

Gender

State	Male	Female	Total N
FL	25.0%	75.0%	16
GA	13.6%	86.4%	44
IL	8.2%	91.8%	49
IN/OH	24.1%	75.9%	141
MD	21.8%	74.3%	101
MI	0.0%	100.0%	8
MO	27.2%	72.8%	92
NM	39.1%	60.9%	23
NV	18.8%	81.3%	48
USMC	11.1%	88.9%	9

Age

State	Under 21	21–30	31–40	41–50	51–60	61–70	Over 70	Total N
FL		18.8%	18.8%	6.3%	56.3%			16
GA					2.3%	29.5%	68.2%	44
IL	16.3%	18.4%	6.1%	4.1%	8.2%	16.3%	30.6%	49
IN/OH	3.5%	17.0%	18.4%	26.2%	22.0%	7.8%	5.0%	141
MD					9.9%	33.7%	52.5%	101
MI					12.5%	37.5%	50.0%	8
MO		7.6%	19.6%	14.1%	19.6%	16.3%	22.8%	92
NM		4.3%	26.1%	30.4%	30.4%	4.3%	4.3%	23
NV		18.8%	18.8%	33.3%	22.9%	6.3%		48
USMC	11.1%		22.2%	22.2%	44.4%			9

Race

State	White	African American	Hispanic	Asian or Pacific Islander	American Indian or Alaska Native	Other	Total N
FL	93.8%			6.3%			16
GA	15.9%	81.8%				2.3%	44
IL	63.3%	26.5%	2.0%	4.1%		4.1%	49
IN/OH	95.7%	3.5%	0.7%				141
MD	75.3%	21.6%	1.0%		2.1%		101
MI	100.0%						8
MO	89.1%		6.5%	3.3%	1.1%		92
NM	78.3%		17.4%	4.3%			23
NV	75.0%	16.7%	8.3%				48
USMC	88.9%			11.1%			9

Education

State	Less Than High School	High School	Some College	College Degree	Some Grad. School	Graduate Degree	Total N
FL		31.3%	25.0%	18.8%	6.3%	18.8%	16
GA	25.0%	50.0%	13.6%	9.1%	2.3%		44
IL	10.2%	16.3%	42.9%	12.2%	12.2%	6.1%	49
IN/OH	2.8%	22.7%	29.1%	27.0%	8.5%	9.9%	141
MD	15.6%	36.5%	29.2%	6.3%	8.3%	4.2%	101
MI		62.5%	37.5%				8
MO	13.0%	22.8%	12.0%	26.1%	6.5%	5.4%	92
NM		34.8%	21.7%	21.7%	13.0%	8.7%	23
NV	2.1%	8.3%	35.4%	35.4%	6.3%	12.5%	48
USMC		33.3%	44.4%	22.2%			9

The tables below illustrate adult pre- and posttest performance by State, including New Mexico, Illinois, Indiana/Ohio, Maryland, Missouri, and Nevada. The U.S. Marine Corps (USMC), Michigan, Florida, and Georgia each had only an adult program data set, so the results for these States are presented in the Magnet Center section.

New Mexico

(Magnet Centers: Albuquerque and Roswell)

Across all sections, pretest to posttest results are mixed. No statistically significant improvements are observed, although "Heart-Healthy Eating Behavior" shows the largest increase. Pre- and posttest scores are comparable to those of the adult sample overall.

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	9	72.2%	72.2%	NO
Overweight/Obesity Knowledge	% Correct	9	74.1%	67.9%	NO
Heart-Healthy Eating Attitude	1–4	9	3.35	3.44	YES
Overweight/Obesity Attitude	1–4	9	2.99	3.07	YES
Heart-Healthy Eating Behavior	0–4	9	2.08	2.61	YES
Physical Activity Level	0–12	12	7.42	7.50	YES
Physical Activity Attitude	0–4	12	3.30	3.21	NO
Physical Activity Knowledge	% Correct	12	94.4%	88.9%	NO
High Blood Pressure Knowledge	% Correct	12	61.3%	60.5%	NO
Cholesterol Knowledge	% Correct	10	78.3%	80.0%	YES
FIT Score	# Hours	9	7.42	13.03	YES
SIT Score	# Hours	12	40.17	38.17	YES

Illinois

(Magnet Centers: Homewood, Rockford, and Urbana)

Illinois adult program results indicate only slight improvements in most areas; none are significant. Relative to other States, Illinois participants scored poorly on many sections, especially those testing various areas of knowledge. However, their scores are similar to those of other States in "Heart-Healthy Eating Attitude," "Overweight/Obesity Attitude," "Physical Activity Level," and "FIT Score."

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	35	62.4%	66.9%	YES
Overweight/Obesity Knowledge	% Correct	35	65.1%	65.6%	YES
Heart-Healthy Eating Attitude	1–4	35	3.32	3.41	YES
Overweight/Obesity Attitude	1–4	34	2.84	2.92	YES
Heart-Healthy Eating Behavior	0–4	34	2.22	2.24	YES
Physical Activity Level	0–12	25	6.44	7.40	YES
Physical Activity Attitude	1–4	25	2.91	2.94	YES
Physical Activity Knowledge	% Correct	25	79.3%	82.3%	YES
High Blood Pressure Knowledge	% Correct	35	54.0%	55.8%	NO
Cholesterol Knowledge	% Correct	35	65.7%	70.1%	YES
FIT Score	# Hours	21	11.40	12.42	YES
SIT Score	# Hours	22	38.39	31.95	YES

Indiana/Ohio

(Magnet Centers: Bloomington, Elyria, Greene County, Lafayette, and South Bend)

The Indiana/Ohio results indicate little change from pretest to posttest. Almost every area of testing shows slight but not significant improvement. Overall, Indiana/Ohio scores are very close to overall adult scores.

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	79	65.7%	70.2%	YES
Overweight/Obesity Knowledge	% Correct	77	69.0%	71.2%	YES
Heart-Healthy Eating Attitude	1–4	77	3.28	3.29	YES
Overweight/Obesity Attitude	1–4	79	2.82	2.83	YES
Heart-Healthy Eating Behavior	0–4	79	2.20	2.20	NO
Physical Activity Level	0–12	79	6.18	6.56	YES
Physical Activity Attitude	1–4	77	3.07	3.16	YES
Physical Activity Knowledge	% Correct	79	91.5%	92.5%	YES
High Blood Pressure Knowledge	% Correct	79	62.0%	62.2%	YES
Cholesterol Knowledge	% Correct	74	74.0%	77.6%	YES
FIT Score	# Hours	73	10.89	13.60	YES
SIT Score	# Hours	78	45.41	43.70	YES

Maryland

(Magnet Centers: Baltimore, Montgomery County, and Queen Anne County)

Adult participants in Maryland showed significant improvement in four areas: “Heart-Healthy Eating Knowledge,” “Heart-Healthy Eating Attitude,” “Physical Activity Knowledge,” and “High Blood Pressure Knowledge.” Posttest scores suggest that there is still much room for improvement with regard to participant understanding of overweight/obesity risks, causes of high blood pressure, and their level of physical activity (i.e., “Physical Activity Level” and “FIT Score”).

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	52	56.2%	70.3%	**YES**
Overweight/Obesity Knowledge	% Correct	53	65.5%	68.6%	YES
Heart-Healthy Eating Attitude	1–4	53	3.38	3.50	**YES**
Overweight/Obesity Attitude	1–4	54	2.78	2.89	YES
Heart-Healthy Eating Behavior	0–4	54	2.29	2.31	YES
Physical Activity Level	0–12	60	5.38	5.88	YES
Physical Activity Attitude	1–4	59	3.06	3.00	NO

Physical Activity Knowledge	% Correct	44	85.2%	89.4%	**YES**
High Blood Pressure Knowledge	% Correct	57	52.4%	60.5%	**YES**
Cholesterol Knowledge	% Correct	58	75.0%	77.8%	YES
FIT Score	# Hours	18	6.39	6.42	YES
SIT Score	# Hours	16	23.31	19.22	YES

Missouri

(Magnet Centers: Des Peres, Jefferson City, Poplar Bluff, and Springfield)

Missouri's results demonstrate very significant improvement across all sections, especially "Heart-Healthy Eating Knowledge," "Physical Activity Level," and "Physical Activity Knowledge." Pretest scores are low compared with other States, yet the posttest scores put Missouri's participants at levels similar and, in some cases, superior to the rest of the adult sample.

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	47	52.9%	78.9%	**YES**
Overweight/Obesity Knowledge	% Correct	46	59.7%	78.0%	**YES**
Heart-Healthy Eating Attitude	1–4	46	3.08	3.50	**YES**
Overweight/Obesity Attitude	1–4	47	2.52	2.95	**YES**
Heart-Healthy Eating Behavior	0–4	46	1.40	2.51	**YES**
Physical Activity Level	0–12	72	4.14	7.49	**YES**
Physical Activity Attitude	1–4	72	2.55	3.43	**YES**
Physical Activity Knowledge	% Correct	72	70.1%	93.0%	**YES**
High Blood Pressure Knowledge	% Correct	45	53.4%	75.5%	**YES**
Cholesterol Knowledge	% Correct	45	60.4%	84.1%	**YES**
FIT Score	# Hours	68	3.86	5.51	**YES**
SIT Score	# Hours	64	45.29	23.89	**YES**

VI. Magnet Center and Individual Program Results

Child Programs

Most individual children's programs show score increases from pretest to posttest, but many of them have too few participants to observe a statistically significant difference in program performance. In all but a few programs, participants completed all sections of the children's questionnaire.

Tamarac, FL—Youth Summer Shape-Up

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	18	84.1%	100.0%	**YES**
Heart-Healthy Eating Behavior	% Healthy	18	51.6%	74.6%	**YES**
Heart-Healthy Eating Intention	% Healthy	18	50.8%	89.6%	**YES**
Physical Activity Attitude	0–12	18	9.94	10.83	**YES**

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	18	8.72	
I have done this in the past week	# Activities	18	3.56	
I would like to learn how to do this	# Activities	18	1.17	
Something new I learned	# Activities	18		9.00
I got better at this	# Activities	18		10.28
I would like to play this again	# Activities	18		11.39

Lee County, FL—Schandler Hall Summer Camp

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	29	78.8%	94.1%	**YES**
Heart-Healthy Eating Behavior	% Healthy	29	42.9%	59.0%	**YES**
Heart-Healthy Eating Intention	% Healthy	29	41.4%	51.5%	YES
Physical Activity Attitude	0–12	29	8.48	8.93	YES

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	29	9.59	
I have done this in the past week	# Activities	29	4.48	
I would like to learn how to do this	# Activities	29	1.66	
Something new I learned	# Activities	29		3.24
I got better at this	# Activities	29		6.21
I would like to play this again	# Activities	29		7.41

Oldsmar, FL—Summer Camp

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	23	81.2%	80.1%	NO
Heart-Healthy Eating Behavior	% Healthy	23	61.4%	53.9%	NO
Heart-Healthy Eating Intention	% Healthy	23	56.5%	46.0%	NO
Physical Activity Attitude	0–12	22	9.23	8.77	NO

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	21	7.81	
I have done this in the past week	# Activities	21	3.24	
I would like to learn how to do this	# Activities	21	2.48	
Something new I learned	# Activities	21		2.43
I got better at this	# Activities	21		4.48
I would like to play this again	# Activities	21		5.71

Largo, FL—Kid City

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	24	88.1%	83.3%	NO
Heart-Healthy Eating Behavior	% Healthy	24	37.5%	45.2%	YES
Heart-Healthy Eating Intention	% Healthy	24	37.5%	41.7%	YES
Physical Activity Attitude	0–12	20	9.50	9.35	NO

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	19	8.63	
I have done this in the past week	# Activities	19	3.32	
I would like to learn how to do this	# Activities	19	1.05	
Something new I learned	# Activities	19		2.68
I got better at this	# Activities	19		3.79
I would like to play this again	# Activities	19		7.26

Largo, FL—Cool Kids

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Intention	% Healthy	22	50.1%	46.8%	NO
Physical Activity Attitude	0–12	19	8.89	8.74	NO

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	18	8.83	
I have done this in the past week	# Activities	18	5.28	
I would like to learn how to do this	# Activities	18	2.11	
Something new I learned	# Activities	18		4.17
I got better at this	# Activities	18		5.33
I would like to play this again	# Activities	18		5.17

Largo, FL—Hero's Camp

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	40	78.2%	83.2%	**YES**
Heart-Healthy Eating Behavior	% Healthy	40	55.7%	55.8%	YES
Heart-Healthy Eating Intention	% Healthy	40	49.2%	53.2%	YES
Physical Activity Attitude	0–12	38	9.32	9.21	NO

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	38	9.82	
I have done this in the past week	# Activities	38	4.79	
I would like to learn how to do this	# Activities	38	2.39	
Something new I learned	# Activities	38		6.50
I got better at this	# Activities	38		5.00
I would like to play this again	# Activities	38		5.00

Savannah, GA—Kids Camps

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	55	78.6%	80.4%	YES
Heart-Healthy Eating Behavior	% Healthy	55	53.7%	62.1%	YES
Heart-Healthy Eating Intention	% Healthy	52	51.6%	56.6%	YES
Physical Activity Attitude	0–12	55	8.69	8.62	NO

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	52	9.10	
I have done this in the past week	# Activities	52	4.08	
I would like to learn how to do this	# Activities	52	3.08	
Something new I learned	# Activities	52		4.08
I got better at this	# Activities	52		5.37
I would like to play this again	# Activities	52		6.33

Rockford, IL—21st Century

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	39	64.5%	61.8%	NO
Heart-Healthy Eating Behavior	% Healthy	39	46.9%	56.4%	YES
Heart-Healthy Eating Intention	% Healthy	38	47.7%	55.5%	YES
Physical Activity Attitude	0–12	31	8.19	10.10	**YES**

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	32	9.41	
I have done this in the past week	# Activities	32	2.34	
I would like to learn how to do this	# Activities	32	2.38	
Something new I learned	# Activities	32		0.00
I got better at this	# Activities	32		0.19
I would like to play this again	# Activities	32		5.91

Homewood, IL—Extra Innings

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Physical Activity Attitude	0–12	10	8.40	8.00	NO

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	10	8.20	
I have done this in the past week	# Activities	10	5.40	
I would like to learn how to do this	# Activities	10	3.30	
Something new I learned	# Activities	10		7.00
I got better at this	# Activities	10		5.40
I would like to play this again	# Activities	10		3.60

Urbana, IL—Sports Camp

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	18	80.2%	84.1%	YES
Heart-Healthy Eating Behavior	% Healthy	18	40.0%	54.1%	YES
Heart-Healthy Eating Intention	% Healthy	18	50.5%	49.6%	NO
Physical Activity Attitude	0–12	15	9.07	9.73	YES

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	18	9.78	
I have done this in the past week	# Activities	18	3.39	
I would like to learn how to do this	# Activities	18	2.22	
Something new I learned	# Activities	18		1.44
I got better at this	# Activities	18		5.94
I would like to play this again	# Activities	18		7.67

Bloomington, IN—Kid City Sports

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Physical Activity Attitude	0–12	13	8.92	8.46	NO

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	13	10.54	
I have done this in the past week	# Activities	13	5.85	
I would like to learn how to do this	# Activities	13	2.31	
Something new I learned	# Activities	13		2.77
I got better at this	# Activities	13		3.92
I would like to play this again	# Activities	13		7.08

Gary, IN—Kids Learn 2 Live

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	16	48.2%	80.4%	**YES**
Heart-Healthy Eating Behavior	% Healthy	16	25.0%	50.9%	**YES**
Heart-Healthy Eating Intention	% Healthy	16	19.6%	50.9%	**YES**
Physical Activity Attitude	0–12	16	6.13	7.31	**YES**

This program did not complete the "Things I Like . . . /Things I Learned . . ." section.

Bowling Green, OH—Summer Day Camps

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	3	85.7%	85.7%	NO
Heart-Healthy Eating Behavior	% Healthy	3	57.1%	66.7%	YES
Heart-Healthy Eating Intention	% Healthy	3	38.1%	57.1%	YES
Physical Activity Attitude	0–12	3	8.00	9.00	YES

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	3	9.67	
I have done this in the past week	# Activities	3	3.67	
I would like to learn how to do this	# Activities	3	3.33	
Something new I learned	# Activities	3		7.33
I got better at this	# Activities	3		8.00
I would like to play this again	# Activities	3		8.33

South Bend, IN—Summer Fun Learning Camp

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	43	80.7%	67.1%	NO
Heart-Healthy Eating Behavior	% Healthy	43	32.9%	42.5%	**YES**
Heart-Healthy Eating Intention	% Healthy	44	31.5%	40.9%	YES
Physical Activity Attitude	0–12	43	7.70	6.56	NO

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	40	9.68	
I have done this in the past week	# Activities	40	2.58	
I would like to learn how to do this	# Activities	40	1.73	
Something new I learned	# Activities	40		5.28
I got better at this	# Activities	40		5.13
I would like to play this again	# Activities	40		3.23

South Bend, IN—Kids World

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	41	69.3%	73.6%	YES
Heart-Healthy Eating Behavior	% Healthy	41	44.9%	44.3%	NO
Heart-Healthy Eating Intention	% Healthy	41	38.7%	46.1%	**YES**
Physical Activity Attitude	0–12	39	8.79	9.26	YES

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	40	8.93	
I have done this in the past week	# Activities	40	3.90	
I would like to learn how to do this	# Activities	40	2.55	
Something new I learned	# Activities	40		3.78
I got better at this	# Activities	40		5.95
I would like to play this again	# Activities	40		8.23

Lafayette, IN—McAllister Day Camp

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	50	74.1%	84.3%	**YES**
Heart-Healthy Eating Behavior	% Healthy	50	51.2%	56.9%	YES
Heart-Healthy Eating Intention	% Healthy	50	41.4%	58.3%	**YES**
Physical Activity Attitude	0–12	50	8.38	8.32	NO

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	49	8.10	
I have done this in the past week	# Activities	49	4.86	
I would like to learn how to do this	# Activities	49	3.20	
Something new I learned	# Activities	49		4.06
I got better at this	# Activities	49		8.51
I would like to play this again	# Activities	49		8.88

Adrian, MI—Summer Playground

No comparison was possible. Only one person completed the posttest.

Monroe, MI—Summer Camp (ALCC '02)

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	14	69.4%	86.7%	**YES**
Heart-Healthy Eating Behavior	% Healthy	14	28.6%	62.2%	**YES**
Heart-Healthy Eating Intention	% Healthy	14	38.8%	57.1%	**YES**
Physical Activity Attitude	0–12	14	8.00	8.07	YES

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	14	10.07	
I have done this in the past week	# Activities	14	9.36	
I would like to learn how to do this	# Activities	14	7.36	
Something new I learned	# Activities	14		11.14
I got better at this	# Activities	14		8.07
I would like to play this again	# Activities	14		6.00

Muskegon, MI—Playground Program

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	30	73.3%	82.9%	**YES**
Heart-Healthy Eating Behavior	% Healthy	30	54.5%	75.4%	**YES**
Heart-Healthy Eating Intention	% Healthy	30	51.3%	62.9%	**YES**
Physical Activity Attitude	0–12	29	9.45	8.66	NO

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	26	7.65	
I have done this in the past week	# Activities	26	3.23	
I would like to learn how to do this	# Activities	26	2.27	
Something new I learned	# Activities	26		3.54
I got better at this	# Activities	26		3.88
I would like to play this again	# Activities	26		6.69

Meridian Township, MI—Playground Program

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	10	67.1%	74.3%	YES
Heart-Healthy Eating Behavior	% Healthy	10	41.4%	52.9%	YES
Heart-Healthy Eating Intention	% Healthy	10	41.4%	50.2%	YES
Physical Activity Attitude	0–12	10	8.00	8.90	YES

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	10	9.50	
I have done this in the past week	# Activities	10	8.20	
I would like to learn how to do this	# Activities	10	1.80	
Something new I learned	# Activities	10		4.80
I got better at this	# Activities	10		4.60
I would like to play this again	# Activities	10		7.40

Poplar Bluff, MO—Wall Walk

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	41	69.2%	95.8%	**YES**
Heart-Healthy Eating Behavior	% Healthy	5	17.1%	25.7%	YES
Heart-Healthy Eating Intention	% Healthy	41	21.6%	81.3%	**YES**
Physical Activity Attitude	0–12	42	10.05	10.43	YES

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	41	4.98	
I have done this in the past week	# Activities	41	1.95	
I would like to learn how to do this	# Activities	41	0.95	
Something new I learned	# Activities	41		2.44
I got better at this	# Activities	41		3.85
I would like to play this again	# Activities	41		4.00

Jefferson City, MO—Start Smart Baseball

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	38	55.6%	59.0%	YES
Heart-Healthy Eating Behavior	% Healthy	39	43.2%	51.9%	YES
Heart-Healthy Eating Intention	% Healthy	38	39.1%	48.9%	**YES**
Physical Activity Attitude	0–12	35	8.71	9.29	YES

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	37	7.84	
I have done this in the past week	# Activities	37	3.86	
I would like to learn how to do this	# Activities	37	6.76	
Something new I learned	# Activities	37		1.46
I got better at this	# Activities	37		2.68
I would like to play this again	# Activities	37		3.19

Des Peres, MO—Camp Des Peres

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	17	73.9%	76.5%	YES
Heart-Healthy Eating Behavior	% Healthy	16	46.4%	60.7%	**YES**
Heart-Healthy Eating Intention	% Healthy	16	43.8%	48.8%	YES
Physical Activity Attitude	0–12	16	9.88	9.13	NO

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	14	8.64	
I have done this in the past week	# Activities	14	3.21	
I would like to learn how to do this	# Activities	14	1.14	
Something new I learned	# Activities	14		1.21
I got better at this	# Activities	14		4.64
I would like to play this again	# Activities	14		6.93

Springfield, MO—McBride Day Camp

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	8	80.4%	82.1%	YES
Heart-Healthy Eating Behavior	% Healthy	8	39.3%	35.7%	NO
Heart-Healthy Eating Intention	% Healthy	8	40.8%	39.3%	NO
Physical Activity Attitude	0–12	8	9.50	9.63	YES

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	8	9.88	
I have done this in the past week	# Activities	8	6.75	
I would like to learn how to do this	# Activities	8	1.88	
Something new I learned	# Activities	8		1.50
I got better at this	# Activities	8		9.00
I would like to play this again	# Activities	8		6.75

Kansas City, MO—Operation READY

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	16	70.5%	72.1%	YES
Heart-Healthy Eating Behavior	% Healthy	18	53.2%	60.1%	YES
Heart-Healthy Eating Intention	% Healthy	19	32.3%	54.2%	**YES**
Physical Activity Attitude	0–12	18	8.72	9.67	**YES**

This program did not complete "Things I Learned and Did This Summer" responses.

Clark County, NV—Desert Breeze

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	10	71.4%	75.7%	YES
Heart-Healthy Eating Behavior	% Healthy	10	34.3%	34.3%	NO
Heart-Healthy Eating Intention	% Healthy	10	24.5%	28.6%	YES
Physical Activity Attitude	0–12	10	7.00	8.20	YES

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	10	12.00	
I have done this in the past week	# Activities	10	2.30	
I would like to learn how to do this	# Activities	10	1.70	
Something new I learned	# Activities	10		1.70
I got better at this	# Activities	10		4.00
I would like to play this again	# Activities	10		4.30

Las Vegas, NV—Kids Kamp

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	119	74.9%	92.8%	**YES**
Heart-Healthy Eating Behavior	% Healthy	147	49.6%	83.3%	**YES**
Heart-Healthy Eating Intention	% Healthy	141	46.6%	95.4%	**YES**
Physical Activity Attitude	0–12	189	9.09	9.75	**YES**

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	192	9.60	
I have done this in the past week	# Activities	192	5.60	
I would like to learn how to do this	# Activities	192	3.01	
Something new I learned	# Activities	192		9.72
I got better at this	# Activities	192		12.64
I would like to play this again	# Activities	192		3.85

Henderson, NV—Kids Zone

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	33	81.0%	81.0%	NO
Heart-Healthy Eating Behavior	% Healthy	33	67.5%	80.1%	YES
Heart-Healthy Eating Intention	% Healthy	33	55.8%	73.6%	**YES**
Physical Activity Attitude	0–12	34	9.74	9.47	NO

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	26	8.38	
I have done this in the past week	# Activities	26	4.50	
I would like to learn how to do this	# Activities	26	1.54	
Something new I learned	# Activities	26		1.35
I got better at this	# Activities	26		6.54
I would like to play this again	# Activities	26		5.58

Rio Rancho, NM—Sportz Camp: Star Heights

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	12	78.6%	95.2%	**YES**
Heart-Healthy Eating Behavior	% Healthy	12	41.7%	63.1%	**YES**
Heart-Healthy Eating Intention	% Healthy	12	53.4%	66.1%	YES
Physical Activity Attitude	0–12	9	9.44	9.33	NO

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	9	9.89	
I have done this in the past week	# Activities	9	3.89	
I would like to learn how to do this	# Activities	9	1.22	
Something new I learned	# Activities	9		2.11
I got better at this	# Activities	9		4.11
I would like to play this again	# Activities	9		7.33

Rio Rancho, NM—Sportz Camp: Haynes

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	22	77.9%	82.5%	YES
Heart-Healthy Eating Behavior	% Healthy	22	55.4%	72.7%	**YES**
Heart-Healthy Eating Intention	% Healthy	22	53.2%	76.6%	**YES**
Physical Activity Attitude	0–12	20	9.90	9.85	NO

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	26	8.46	
I have done this in the past week	# Activities	26	2.92	
I would like to learn how to do this	# Activities	26	2.31	
Something new I learned	# Activities	26		3.38
I got better at this	# Activities	26		4.65
I would like to play this again	# Activities	26		7.27

Rio Rancho, NM—Sportz Camp: Colinas

No comparisons were possible; only one person completed a posttest questionnaire.

Albuquerque, NM—Wellness/After-school (Healthy Eating Only)

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	6	92.9%	100.0%	YES
Heart-Healthy Eating Behavior	% Healthy	6	64.3%	71.4%	YES
Heart-Healthy Eating Intention	% Healthy	6	85.7%	64.3%	NO

This program did not complete "Things I Like . . . /Things I Learned . . ." sections.

Albuquerque, NM—Wellness/After-school (Physical Activity Only)

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Physical Activity Attitude	0–12	3	12.00	10.00	NO

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	3	5.67	
I have done this in the past week	# Activities	3	5.00	
I would like to learn how to do this	# Activities	3	1.33	
Something new I learned	# Activities	3		1.67
I got better at this	# Activities	3		5.67
I would like to play this again	# Activities	3		6.33

Cherry Point, NC—U.S. Marine Corps: School Age Care (SAC) Program

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	12	75.6%	76.2%	YES
Heart-Healthy Eating Behavior	% Healthy	12	57.2%	60.7%	YES
Heart-Healthy Eating Intention	% Healthy	12	56.3%	61.9%	YES
Physical Activity Attitude	0–12	12	9.00	9.17	YES

Things I Like and Do/Things I Learned and Did	Scale	N	Pre Mean	Post Mean
I like to do this	# Activities	12	9.83	
I have done this in the past week	# Activities	12	6.33	
I would like to learn how to do this	# Activities	12	1.83	
Something new I learned	# Activities	12		3.75
I got better at this	# Activities	12		5.42
I would like to play this again	# Activities	12		6.75

Adolescent Programs

Although many posttest scores for individual adolescent programs were higher than pretest scores, most of them were not based on a pre-post sample size large enough for a valid assessment of program performance. Only one program—Realize Productions in Glendale, AZ—reported more than 13 matching pre- and posttests. All programs completed all sections of the adolescent questionnaire.

Queen Anne County, MD—After-School Program, Centreville

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	3	66.7%	77.8%	YES
Heart-Healthy Eating Attitude	1–4	3	3.07	3.05	NO
Overweight/Obesity Attitude	1–4	3	2.46	2.88	YES
Heart-Healthy Eating Behavior	% Healthy	3	41.7%	37.5%	NO
Heart-Healthy Eating Intention	% Healthy	3	57.1%	47.6%	NO
Physical Activity Level	0–6	3	2.33	3.33	YES

Queen Anne County, MD—After-School Program, Sudlersville

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	5	72.6%	81.0%	**YES**
Heart-Healthy Eating Attitude	1–4	5	2.76	2.96	YES
Overweight/Obesity Attitude	1–4	5	2.68	2.75	YES
Heart-Healthy Eating Behavior	% Healthy	5	30.0%	86.0%	**YES**
Heart-Healthy Eating Intention	% Healthy	5	35.7%	57.9%	YES
Physical Activity Level	0–6	5	2.60	3.60	**YES**

Montgomery County, MD—Rocky Hill

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	8	90.1%	81.3%	NO
Overweight/Obesity Knowledge	% Correct	8	63.9%	66.7%	YES
Heart-Healthy Eating Attitude	1–4	8	2.88	3.20	YES
Overweight/Obesity Attitude	1–4	8	2.56	2.49	NO
Heart-Healthy Eating Behavior	% Healthy	8	44.2%	75.9%	**YES**
Heart-Healthy Eating Intention	% Healthy	8	61.6%	72.9%	YES
Physical Activity Level	0–6	8	2.63	3.00	YES

Rio Rancho, NM—Higher Ground

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	12	77.9%	85.4%	YES
Overweight/Obesity Knowledge	% Correct	12	63.0%	69.1%	YES
Heart-Healthy Eating Attitude	1–4	12	2.58	2.52	NO
Overweight/Obesity Attitude	1–4	11	2.40	2.65	YES
Heart-Healthy Eating Behavior	% Healthy	11	19.3%	45.5%	YES
Heart-Healthy Eating Intention	% Healthy	12	29.8%	41.9%	**YES**
Physical Activity Level	0–6	12	2.42	2.50	YES

Muskegon, MI—Playground Program

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	13	69.0%	69.1%	YES
Overweight/Obesity Knowledge	% Correct	12	61.8%	57.2%	NO
Heart-Healthy Eating Attitude	1–4	13	2.67	2.81	**YES**
Overweight/Obesity Attitude	1–4	12	2.84	2.56	NO
Heart-Healthy Eating Behavior	% Healthy	10	33.8%	50.7%	**YES**
Heart-Healthy Eating Intention	% Healthy	11	26.2%	34.8%	**YES**
Physical Activity Level	0–6	12	4.25	4.50	YES

Glendale, AZ—Realize Productions

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	32	75.1%	77.6%	YES
Overweight/Obesity Knowledge	% Correct	32	62.2%	80.9%	**YES**
Heart-Healthy Eating Attitude	1–4	32	2.52	3.14	**YES**
Overweight/Obesity Attitude	1–4	32	2.38	1.73	NO
Heart-Healthy Eating Behavior	% Healthy	32	41.0%	60.5%	**YES**
Heart-Healthy Eating Intention	% Healthy	32	51.3%	77.2%	**YES**
Physical Activity Level	0–6	32	4.22	4.16	NO

Lee County, FL—Schandler Teen Camp

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	12	65.6%	73.4%	YES
Overweight/Obesity Knowledge	% Correct	12	59.3%	54.6%	NO
Heart-Healthy Eating Attitude	1–4	12	2.53	2.48	NO
Overweight/Obesity Attitude	1–4	12	2.49	2.82	YES
Heart-Healthy Eating Behavior	% Healthy	12	38.5%	50.7%	YES
Heart-Healthy Eating Intention	% Healthy	12	44.8%	40.5%	NO
Physical Activity Level	0–6	12	2.50	3.67	**YES**

Decatur, IL—Teen Summer Camp

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	7	79.8%	81.0%	YES
Overweight/Obesity Knowledge	% Correct	7	60.3%	60.3%	NO
Heart-Healthy Eating Attitude	1–4	8	2.78	3.26	YES
Overweight/Obesity Attitude	1–4	8	2.73	2.73	NO
Heart-Healthy Eating Behavior	% Healthy	8	35.9%	35.9%	NO
Heart-Healthy Eating Intention	% Healthy	8	48.5%	75.0%	**YES**
Physical Activity Level	0–6	7	4.00	4.00	NO

Adult Programs

Because of the number of adult programs with few cases of matching pre- and posttest data, significant score increases appear only sporadically throughout the following tables of adult program results. The score increases at both Springfield (MO) programs—Cox Healthy Lifestyles 1 and 2—are quite drastic. Adult participants at that Magnet Center site progressed from having some of the lowest pretest scores of any program to having nearly a perfect score in almost every section of the posttest. Most programs administered the entire adult pre- and posttest questionnaires to their participants.

Oldsmar, FL—Lunch-Time Walking

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	10	80.0%	88.3%	YES
Overweight/Obesity Knowledge	% Correct	10	73.3%	92.2%	**YES**
Heart-Healthy Eating Attitude	1–4	10	3.32	3.25	NO
Overweight/Obesity Attitude	1–4	10	2.78	2.74	NO
Heart-Healthy Eating Behavior	0–4	10	2.45	2.39	NO
Physical Activity Level	0–12	10	5.30	7.00	**YES**
Physical Activity Attitude	1–4	10	2.89	3.11	YES
Physical Activity Knowledge	% Correct	10	88.3%	97.5%	**YES**
High Blood Pressure Knowledge	% Correct	10	58.5%	62.1%	YES
Cholesterol Knowledge	% Correct	10	74.2%	87.5%	**YES**
FIT Score	# Hours	9	6.39	7.56	YES
SIT Score	# Hours	9	52.67	42.39	YES

Savannah, GA—Golden Age

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	33	68.3%	67.4%	NO
Overweight/Obesity Knowledge	% Correct	33	67.7%	78.7%	**YES**
Heart-Healthy Eating Attitude	1–4	32	3.40	3.47	YES
Overweight/Obesity Attitude	1–4	32	2.78	2.96	**YES**
Heart-Healthy Eating Behavior	0–4	31	2.72	2.75	YES
Physical Activity Level	0–12	32	7.16	8.09	YES
Physical Activity Attitude	1–4	25	2.95	2.90	NO
Physical Activity Knowledge	% Correct	32	82.8%	86.1%	YES
High Blood Pressure Knowledge	% Correct	31	59.5%	72.0%	**YES**
Cholesterol Knowledge	% Correct	31	75.2%	77.7%	YES
FIT Score	# Hours	23	6.12	6.49	YES
SIT Score	# Hours	23	21.27	16.60	YES

Homewood, IL—Primetime Fitness

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	10	66.7%	83.3%	YES
Overweight/Obesity Knowledge	% Correct	10	71.1%	79.6%	**YES**
Heart-Healthy Eating Attitude	1–4	10	3.47	3.70	**YES**
Overweight/Obesity Attitude	1–4	9	3.20	3.28	YES
Heart-Healthy Eating Behavior	0–4	9	2.71	2.94	YES
High Blood Pressure Knowledge	% Correct	10	57.1%	56.4%	NO
Cholesterol Knowledge	% Correct	10	76.7%	88.3%	**YES**

Rockford, IL—Senior Hour

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	8	57.1%	57.3%	YES
Overweight/Obesity Knowledge	% Correct	8	56.9%	52.8%	NO
Heart-Healthy Eating Attitude	1–4	8	3.21	3.35	YES
Overweight/Obesity Attitude	1–4	8	2.83	2.94	YES
Heart-Healthy Eating Behavior	0–4	8	1.94	1.72	NO
Physical Activity Level	0–12	8	4.63	5.50	YES
Physical Activity Attitude	1–4	8	2.95	2.72	NO
Physical Activity Knowledge	% Correct	8	72.8%	76.9%	YES
High Blood Pressure Knowledge	% Correct	8	47.3%	44.9%	NO
Cholesterol Knowledge	% Correct	8	53.1%	54.5%	YES
FIT Score	# Hours	4	18.13	22.75	YES
SIT Score	# Hours	5	17.90	18.00	NO

Urbana, IL—Parkland

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	17	62.4%	61.8%	NO
Overweight/Obesity Knowledge	% Correct	17	65.4%	63.4%	NO
Heart-Healthy Eating Attitude	1–4	17	3.28	3.26	NO
Overweight/Obesity Attitude	1–4	17	2.65	2.72	YES
Heart-Healthy Eating Behavior	0–4	17	2.10	2.11	YES
Physical Activity Level	0–12	17	7.29	8.29	YES
Physical Activity Attitude	1–4	17	2.89	3.04	YES
Physical Activity Knowledge	% Correct	17	82.4%	84.8%	YES
High Blood Pressure Knowledge	% Correct	17	55.2%	60.5%	YES
Cholesterol Knowledge	% Correct	17	65.2%	66.7%	YES
FIT Score	# Hours	17	9.82	9.99	YES
SIT Score	# Hours	17	44.41	36.06	YES

Bloomington, IN—City Employee Program

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	19	61.4%	74.6%	YES
Overweight/Obesity Knowledge	% Correct	19	71.0%	72.3%	YES
Heart-Healthy Eating Attitude	1–4	19	3.29	3.26	NO
Overweight/Obesity Attitude	1–4	19	2.64	2.93	YES
Heart-Healthy Eating Behavior	0–4	19	2.24	2.42	YES
Physical Activity Level	0–12	19	5.95	7.16	YES
Physical Activity Attitude	1–4	19	3.00	3.28	YES
Physical Activity Knowledge	% Correct	19	94.3%	92.5%	NO
High Blood Pressure Knowledge	% Correct	19	67.3%	65.4%	NO
Cholesterol Knowledge	% Correct	18	75.0%	76.9%	YES
FIT Score	# Hours	18	6.43	8.69	YES
SIT Score	# Hours	19	54.16	59.68	NO

Lafayette, IN—Park Staff

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	32	69.0%	69.1%	YES
Overweight/Obesity Knowledge	% Correct	32	69.4%	68.6%	NO
Heart-Healthy Eating Attitude	1–4	32	3.13	3.11	NO
Overweight/Obesity Attitude	1–4	32	2.88	2.81	NO
Heart-Healthy Eating Behavior	0–4	32	1.87	1.89	YES
Physical Activity Level	0–12	32	6.03	6.09	YES
Physical Activity Attitude	1–4	32	3.10	3.11	YES
Physical Activity Knowledge	% Correct	32	90.6%	92.7%	YES
High Blood Pressure Knowledge	% Correct	32	59.4%	60.0%	YES
Cholesterol Knowledge	% Correct	32	70.4%	74.0%	YES
FIT Score	# Hours	29	14.50	20.09	YES
SIT Score	# Hours	32	44.75	40.80	YES

South Bend, IN—Healthy Seniors for Life

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	8	52.1%	64.6%	YES
Overweight/Obesity Knowledge	% Correct	8	63.9%	75.0%	YES
Heart-Healthy Eating Attitude	1–4	8	3.35	3.56	YES
Overweight/Obesity Attitude	1–4	8	2.81	2.66	NO
Heart-Healthy Eating Behavior	0–4	8	2.48	2.44	NO
Physical Activity Level	0–12	8	6.00	7.25	YES
Physical Activity Attitude	1–4	8	2.96	3.13	YES
Physical Activity Knowledge	% Correct	8	85.1%	87.5%	YES

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
High Blood Pressure Knowledge	% Correct	8	50.9%	60.7%	YES
Cholesterol Knowledge	% Correct	6	69.4%	77.8%	YES
FIT Score	# Hours	7	9.07	12.71	YES
SIT Score	# Hours	7	29.43	27.14	**YES**

South Bend, IN—City Employees

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	6	69.4%	77.8%	YES
Overweight/Obesity Knowledge	% Correct	6	68.5%	75.9%	YES
Heart-Healthy Eating Attitude	1–4	6	3.36	3.47	YES
Overweight/Obesity Attitude	1–4	6	2.73	2.56	NO
Heart-Healthy Eating Behavior	0–4	6	2.32	2.17	NO
Physical Activity Level	0–12	6	4.67	4.17	NO
Physical Activity Attitude	1–4	6	2.67	2.56	NO
Physical Activity Knowledge	% Correct	6	93.1%	90.3%	NO
High Blood Pressure Knowledge	% Correct	6	69.0%	65.5%	NO
Cholesterol Knowledge	% Correct	6	86.1%	83.3%	NO
FIT Score	# Hours	5	5.20	5.10	NO
SIT Score	# Hours	6	49.00	47.83	YES

Elyria, OH—The Active People

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	5	73.3%	60.0%	NO
Overweight/Obesity Knowledge	% Correct	3	72.7%	85.2%	YES
Heart-Healthy Eating Attitude	1–4	3	3.89	3.67	NO
Overweight/Obesity Attitude	1–4	5	3.08	2.90	NO
Heart-Healthy Eating Behavior	0–4	5	3.22	2.60	NO
Physical Activity Level	0–12	5	7.60	7.40	NO
Physical Activity Attitude	1–4	3	3.33	3.64	YES
Physical Activity Knowledge	% Correct	5	86.7%	95.0%	YES
High Blood Pressure Knowledge	% Correct	5	67.1%	62.9%	NO
Cholesterol Knowledge	% Correct	3	66.7%	88.9%	**YES**
FIT Score	# Hours	5	10.20	4.90	NO
SIT Score	# Hours	5	47.00	31.10	YES

Greene County, OH—Sportfitness

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	9	68.5%	70.4%	YES
Overweight/Obesity Knowledge	% Correct	9	66.7%	66.7%	NO
Heart-Healthy Eating Attitude	1–4	9	3.46	3.46	NO
Overweight/Obesity Attitude	1–4	9	2.94	2.97	YES
Heart-Healthy Eating Behavior	0–4	9	2.36	2.42	YES
Physical Activity Level	0–12	9	7.56	7.44	NO
Physical Activity Attitude	1–4	9	3.44	3.34	NO
Physical Activity Knowledge	% Correct	9	96.3%	96.3%	NO
High Blood Pressure Knowledge	% Correct	9	62.7%	61.9%	NO
Cholesterol Knowledge	% Correct	9	82.4%	84.3%	YES
FIT Score	# Hours	9	13.10	12.73	YES
SIT Score	# Hours	9	38.44	37.39	YES

Baltimore, MD—Healthy Living

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	31	51.6%	74.2%	**YES**
Overweight/Obesity Knowledge	% Correct	31	65.0%	72.9%	**YES**
Heart-Healthy Eating Attitude	1–4	31	3.31	3.47	YES
Overweight/Obesity Attitude	1–4	31	2.66	2.74	YES
Heart-Healthy Eating Behavior	0–4	31	2.06	2.12	YES
Physical Activity Level	0–12	31	3.87	4.10	YES
Physical Activity Attitude	1–4	31	2.76	2.61	NO
Physical Activity Knowledge	% Correct	17	77.9%	85.8%	**YES**
High Blood Pressure Knowledge	% Correct	31	49.1%	61.8%	**YES**
Cholesterol Knowledge	% Correct	31	70.6%	74.7%	YES

Montgomery County, MD—Longwood Senior Group

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Physical Activity Level	0–12	6	6.50	7.33	YES
Physical Activity Attitude	1–4	5	3.11	3.32	YES
Physical Activity Knowledge	% Correct	5	90.0%	93.3%	YES
High Blood Pressure Knowledge	% Correct	4	51.8%	59.6%	YES
Cholesterol Knowledge	% Correct	5	63.8%	76.7%	YES
FIT Score	# Hours	4	7.00	5.75	NO
SIT Score	# Hours	4	34.50	28.51	YES

Queen Anne County, MD—Walk Across Maryland

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	21	63.0%	64.4%	YES
Overweight/Obesity Knowledge	% Correct	22	66.2%	62.6%	NO
Heart-Healthy Eating Attitude	1–4	22	3.47	3.55	YES
Overweight/Obesity Attitude	1–4	23	2.93	3.09	YES
Heart-Healthy Eating Behavior	0–4	23	2.60	2.57	NO
Physical Activity Level	0–12	23	7.13	7.91	YES
Physical Activity Attitude	1–4	23	3.45	3.45	NO
Physical Activity Knowledge	% Correct	22	89.8%	91.3%	YES
High Blood Pressure Knowledge	% Correct	22	57.2%	59.0%	YES
Cholesterol Knowledge	% Correct	22	83.7%	82.4%	NO
FIT Score	# Hours	14	6.21	6.61	YES
SIT Score	# Hours	12	19.58	16.13	YES

Muskegon, MI—Tai Chi

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Physical Activity Level	0–12	8	6.38	7.50	YES
Physical Activity Attitude	1–4	8	3.12	3.02	NO
Physical Activity Knowledge	% Correct	8	95.8%	91.7%	NO
FIT Score	# Hours	5	13.20	11.92	NO
SIT Score	# Hours	4	38.88	35.00	YES

Des Peres, MO—Wake Up and Work Out

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	5	52.0%	58.3%	YES
Overweight/Obesity Knowledge	% Correct	4	66.7%	76.7%	YES
Heart-Healthy Eating Attitude	1–4	4	3.50	3.04	NO
Overweight/Obesity Attitude	1–4	5	2.45	2.73	YES
Heart-Healthy Eating Behavior	0–4	5	2.13	2.16	YES
Physical Activity Level	0–12	5	8.60	10.00	YES
Physical Activity Attitude	1–4	5	3.60	3.35	NO
Physical Activity Knowledge	% Correct	5	90.0%	93.3%	YES
High Blood Pressure Knowledge	% Correct	4	69.1%	61.0%	NO
Cholesterol Knowledge	% Correct	4	87.5%	81.3%	NO
FIT Score	# Hours	4	5.75	1.00	NO
SIT Score	# Hours	3	16.67	0.00	YES

Jefferson City, MO—City Survivor Challenge

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	27	70.1%	73.5%	YES
Overweight/Obesity Knowledge	% Correct	27	68.8%	71.8%	YES
Heart-Healthy Eating Attitude	1–4	27	3.23	3.29	YES
Overweight/Obesity Attitude	1–4	27	2.79	2.92	YES
Heart-Healthy Eating Behavior	0–4	26	1.91	2.06	YES
Physical Activity Level	0–12	27	6.07	6.30	YES
Physical Activity Attitude	1–4	27	3.07	3.18	YES
Physical Activity Knowledge	% Correct	27	89.5%	92.6%	YES
High Blood Pressure Knowledge	% Correct	26	63.1%	64.1%	YES
Cholesterol Knowledge	% Correct	26	71.5%	75.6%	YES
FIT Score	# Hours	25	5.59	3.76	NO
SIT Score	# Hours	27	48.97	30.93	**YES**

Poplar Bluff, MO—Arthritis Aquatics

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Physical Activity Level	0–12	11	4.82	6.45	YES
Physical Activity Attitude	1–4	11	2.68	3.20	**YES**
Physical Activity Knowledge	% Correct	11	90.2%	89.3%	NO
FIT Score	# Hours	10	8.25	10.55	YES
SIT Score	# Hours	9	26.28	17.50	YES

Springfield, MO—Cox Healthy Lifestyles (Part One)

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Physical Activity Level	0–12	14	1.43	8.64	**YES**
Physical Activity Attitude	1–4	14	2.09	3.82	**YES**
Physical Activity Knowledge	% Correct	14	43.5%	91.7%	**YES**
FIT Score	# Hours	14	0.96	5.86	**YES**
SIT Score	# Hours	10	53.90	30.60	**YES**

Springfield, MO—Cox Healthy Lifestyles (Part Two)

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant))
Heart-Healthy Eating Knowledge	% Correct	15	22.2%	95.6%	**YES**
Overweight/Obesity Knowledge	% Correct	15	41.5%	89.6%	**YES**
Heart-Healthy Eating Attitude	1–4	15	2.69	4.00	**YES**
Overweight/Obesity Attitude	1–4	15	2.07	3.08	**YES**
Heart-Healthy Eating Behavior	0–4	15	0.26	3.39	**YES**

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant))
Physical Activity Level	0–12	15	1.20	8.47	**YES**
Physical Activity Attitude	1–4	15	1.59	3.72	**YES**
Physical Activity Knowledge	% Correct	15	38.9%	97.8%	**YES**
High Blood Pressure Knowledge	% Correct	15	32.4%	99.0%	**YES**
Cholesterol Knowledge	% Correct	15	33.9%	99.4%	**YES**
FIT Score	# Hours	15	0.27	5.97	**YES**
SIT Score	# Hours	15	50.07	15.37	**YES**

Albuquerque, NM—HNP Wellness Adult

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Physical Activity Level	0–12	3	5.33	8.00	YES
Physical Activity Attitude	1–4	3	3.00	3.45	YES
Physical Activity Knowledge	% Correct	3	91.7%	88.9%	NO
High Blood Pressure Knowledge	% Correct	3	42.9%	65.8%	YES
Cholesterol Knowledge	% Correct	3	72.2%	77.8%	YES
FIT Score	# Hours	2	4.75	4.00	NO
SIT Score	# Hours	4	61.13	54.00	YES

Roswell, NM—Sofae

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	8	70.8%	68.8%	NO
Overweight/Obesity Knowledge	% Correct	8	70.8%	63.9%	NO
Heart-Healthy Eating Attitude	1–4	8	3.27	3.38	YES
Overweight/Obesity Attitude	1–4	8	2.98	3.06	YES
Heart-Healthy Eating Behavior	0–4	8	2.15	2.69	YES
Physical Activity Level	0–12	8	7.75	6.88	NO
Physical Activity Attitude	1–4	8	3.36	3.04	NO
Physical Activity Knowledge	% Correct	8	94.8%	87.5%	NO
High Blood Pressure Knowledge	% Correct	8	66.1%	54.5%	NO
Cholesterol Knowledge	% Correct	6	79.2%	77.8%	NO
FIT Score	# Hours	6	7.21	12.54	YES
SIT Score	# Hours	7	26.21	28.29	NO

Roswell, NM—Summer Fun Fitness

Results could not be analyzed because only one participant completed the posttest.

Henderson, NV—SMILE

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	4	37.5%	41.7%	YES
Overweight/Obesity Knowledge	% Correct	4	58.3%	58.3%	NO
Heart-Healthy Eating Attitude	1–4	4	3.23	3.35	YES
Overweight/Obesity Attitude	1–4	4	3.25	3.41	YES
Heart-Healthy Eating Behavior	0–4	4	2.71	2.50	NO
Physical Activity Level	0–12	4	6.75	7.25	YES
Physical Activity Attitude	1–4	4	3.43	3.47	YES
Physical Activity Knowledge	% Correct	4	91.7%	89.6%	NO
High Blood Pressure Knowledge	% Correct	4	58.9%	58.9%	NO
Cholesterol Knowledge	% Correct	4	64.6%	58.3%	NO
FIT Score	# Hours	3	11.17	8.00	NO
SIT Score	# Hours	4	32.63	42.00	NO

Las Vegas, NV—Leisure Services Staff/Walk Across America

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	18	61.9%	64.8%	YES
Overweight/Obesity Knowledge	% Correct	18	63.0%	63.0%	NO
Heart-Healthy Eating Attitude	1–4	18	2.96	3.28	**YES**
Overweight/Obesity Attitude	1–4	18	2.67	2.83	YES
Heart-Healthy Eating Behavior	0–4	18	1.95	2.17	YES
Physical Activity Level	0–12	17	6.24	6.12	NO
Physical Activity Attitude	1–4	18	2.98	3.10	YES
Physical Activity Knowledge	% Correct	18	92.6%	91.6%	NO
High Blood Pressure Knowledge	% Correct	18	67.2%	63.9%	NO
Cholesterol Knowledge	% Correct	18	79.2%	77.8%	NO
FIT Score	# Hours	16	5.72	10.91	YES
SIT Score	# Hours	16	49.94	42.06	YES

Cherry Point, NC (U.S. Marine Corps)—Water Aerobics

Section	Scale	N	Pre Mean	Post Mean	Improvement? (In **Bold** If Significant)
Heart-Healthy Eating Knowledge	% Correct	5	66.7%	70.0%	YES
Overweight/Obesity Knowledge	% Correct	5	64.6%	80.0%	YES
Heart-Healthy Eating Attitude	1–4	5	3.23	3.40	**YES**
Overweight/Obesity Attitude	1–4	5	2.44	3.03	**YES**
Heart-Healthy Eating Behavior	0–4	5	2.00	2.33	YES
Physical Activity Level	0–12	5	7.00	9.60	YES
Physical Activity Attitude	1–4	5	3.32	3.71	**YES**

Section	Scale	N	Pre Mean	Post Mean	**Improvement?** (In **Bold** If Significant)
Physical Activity Knowledge	% Correct	5	86.7%	91.7%	YES
High Blood Pressure Knowledge	% Correct	5	42.2%	54.3%	YES
Cholesterol Knowledge	% Correct	5	71.5%	83.3%	YES
FIT Score	# Hours	5	7.50	10.90	YES
SIT Score	# Hours	5	22.20	21.80	YES

VII. Factor Analysis of Principal Components

Most of the attitude sections and some of the behavior sections of the child, adolescent, and adult Hearts N' Parks questionnaires are composed of variables (questions) that depend upon Likert scales rather than a set of dichotomous variables (e.g., right/wrong or healthy/unhealthy answers). A Likert scale consists of a range of discrete answer choices that are based on an interval scale (e.g., "agree strongly [4 points]," "agree [3 points]," "disagree [2 points]," or "disagree strongly [1 point]"). Groups of variables based on Likert scales can be evaluated with a type of factor analysis called "principal components analysis," which is used to identify the underlying constructs that the group of variables represent, such as "Heart-Healthy Eating Attitude." With principal components analysis (PCA) a large number of independent variables can be systematically reduced to a smaller, conceptually more coherent set of variables. These "principal components" represent a weighted linear combination of the original variables.[1] The principal components are constructed in such a way that the first one accounts for the maximum amount of variability within the set of variables as a whole. The second one accounts for the maximum amount of remaining variance, and so on. "Factor loadings" are defined as the "measures of association (correlations)" between the measured variables and these linear composites.

Child Questionnaire

In the child questionnaire, "Physical Activity Attitude" was analyzed using PCA. The analysis of these 6 items at pretest indicated two principal components, the first of which was notable for strong loadings from items 3–6. These items related to the respondent's *personal feelings* about physical activity and included such questions as "How do you feel about your ability run/play/kick a ball/hit a ball?" The second component was characterized by strong loadings from items 1 and 2, which related to children's *observational* attitudes about physical activity. These two items asked children how they perceived physical activity as it related to other kinds of activities and to other children. On analysis at posttest, however, all 6 items displayed stronger correlations with a single component that seemed to represent their general attitude toward physical activity. This suggests that from pretest to posttest participants' personal feelings and observational attitudes relating to physical activity became more consistent with one another in terms of their general attitude toward physical activity. This section therefore constituted a valid measure of "Physical Activity Attitude."

[1] Dunteman, G. H. (1989). *Principal Components Analysis* (Sage University Paper series on Quantitative Applications in the Social Sciences, No. 07-069). Newbury Park, CA: Sage.

Adolescent Questionnaire

Two sections in the adolescent questionnaire—"Heart-Healthy Eating Attitude" and "Overweight/Obesity Attitude"—were analyzed using PCA. In the section entitled "Heart-Healthy Eating Attitude," the factor loadings of all 10 items in both pretest and posttest were strong enough to support the general construct of healthy eating attitude. In the section "Overweight/Obesity Attitude," the factor loadings of all but one item at pretest were indicative of the construct of overweight/obesity attitude. Item 11h within this section—"Some people are meant to be fat"—does not load well with all other items at pretest. At posttest, however, 11h shows a higher factor loading, which indicates that participants' responses to this and the other seven items in the section became more consistent in representing the underlying construct of overweight/obesity attitude. Overall, these two sections constituted valid measurements of adolescents' "Heart-Healthy Eating Attitude" and "Overweight/Obesity Attitude."

Adult Questionnaire

The adult questionnaire included sections in which principal components analysis applied. In the section "Heart-Healthy Eating Attitude," PCA confirmed that all six items were indicative of the general construct of heart-healthy eating attitude at both pretest and posttest. In the next section, "Overweight/Obesity Attitude," the factor loadings of all eight items also had strong correlations with one component. All seven items in "Heart-Healthy Eating Behavior," which measures how often adults make healthy eating choices, load strongly into a single component, suggesting that they are all indicative of the same construct.

Finally, the items in the adult "Physical Activity Attitude" section all displayed strong factor loadings with one component, with the exception of the last question, question 8n. This question asked the respondent how likely he/she is to say, "If we had exercise facilities and showers at work, then I would be more likely to engage in physical activity." Question 8n had a weak correlation at pretest (0.24) and posttest (0.39), and therefore was not indicative of the general underlying construct of "Physical Activity Attitude." This question failed to correlate strongly with the underlying construct, most likely because its answer was heavily dependent on the respondent's being employed and not having exercise facilities available to him/her. For future evaluations based on the adult questionnaire, it may be sensible to omit the responses to this item from the final data set in order to strengthen the validity of "Physical Activity Attitude" section scores. The additional adult sections analyzed with PCA "Heart-Healthy Eating Attitude," "Overweight/Obesity Attitude," and "Heart-Healthy Eating Behavior" constituted valid measurements of their respective areas and should continue to be used as currently designed.

VIII. Conclusion

Based on the results of the 68 programs presented in chapters IV–VI of this report, the 2002 Hearts N' Parks program was clearly a success. Almost all indicators of heart-healthy eating knowledge, attitudes, behavior, and physical activity—measured among approximately 1,200 participants before and after their programs—demonstrated significant improvement from pretest to posttest. In total, more than 1,900 children, adolescents, and adults participated in the Hearts N' Parks programs detailed in this report.

Children's scores in the four critical areas of heart-healthy eating knowledge, behavior, intention, and physical activity attitude all increased by statistically significant amounts after participants completed their programs. This finding provides strong evidence of both the children's increased ability and their willingness to identify and choose healthy foods instead of less healthy alternatives. Furthermore, children reported learning a wide range of new activities during the programs—an average of five per child—and a majority of children said they "got better" at such heart-healthy activities as softball/baseball, basketball, various exercises and games, jump-rope, soccer, and swimming. Most children reported higher numbers of activities that they "got better at" and "want to play again" after their programs than they reported as activities that they "had done already" and "wanted to learn" before the programs. This suggests that their interest in various kinds of physical activities grew while participating in Hearts N' Parks programs.

The significant improvements observed in children's programs apply to the older group of 10–11-year-olds, as well as younger children (9 and younger). This is a good indication that Hearts N' Parks had a positive effect on both younger and older children. Among States with multiple children's programs, Florida, New Mexico, Michigan, and Nevada achieved the highest posttest results across all sections. In terms of individual program sites, the Las Vegas, Nevada, Kids Kamp posted extremely impressive results in every section, showing dramatic pretest-to-posttest improvement and remarkably high posttest scores. Kids Kamp participants also reported getting better at an average of more than 12 different activities during their program.

The eight adolescent programs with pre- and posttest data showed significant improvement in four of the seven performance areas, most notably in the category of "Heart-Healthy Eating Behavior" and "Heart-Healthy Eating Intention." The only area in which no improvement was demonstrated was "Overweight/Obesity Attitude." Girls scored somewhat better than boys in every area. Although most adolescents were either 12 or 13 years of age, older adolescents (14 and up) earned higher scores in most knowledge, attitude, and behavior areas, and made more improvement from pre- to posttest. The Glendale, AZ, Realize Productions program was the largest adolescent program and posted the most significant gains in performance out of the eight.

Hearts N' Parks adult program participants—78 percent of whom were female—finished their programs with more knowledge than at the start about heart-healthy nutrition, overweight/obesity risks, engaging in proper physical activity, causes of high blood pressure, and controlling high cholesterol. Additionally, their posttest scores suggest far healthier attitudes toward overweight/obesity, eating habits, and physical activity; a significant increase in how frequently they make healthy food choices; and significantly increased time spent doing moderate physical activity. This strong performance is observed in adults older than 60 years of age, as well as those 60 and younger, and in both those who were college educated and those who were not.

Collectively, these adult performance measures point to an unmistakable pattern of change in adult appreciation of the importance of heart-healthy eating and physical activity. Missouri and Maryland, in particular, stand out for having programs that perform well. Among single sites, the adult programs in Baltimore, MD, Springfield, MO, and Oldsmar, FL, demonstrated significant posttest improvement in many areas of heart health.

The principal-components analysis carried out on the various attitude and behavior-related questionnaire sections indicate that these are valid measures of the constructs they represent, although one question may need to be amended or omitted in the adult questionnaire section of physical activity attitude. Question 8n of that section does not appear to be a strong indicator of physical activity attitude.

Hearts N' Parks data collection methods have improved enormously over the last 3 years, through the use of restricted entry spreadsheets, Web site submission, site training, and the "Community Mobilization Guide." Nevertheless, the analytical weight of future Hearts N' Parks evaluations would increase if program personnel become more fastidious in the area of data collection and entry. Data from 2002 show a large amount of unmatched pre- and posttest participant data, which is more often the result of attrition than midprogram participant add-ons. Reducing attrition rates by ensuring that all pretest participants complete posttest questionnaires would increase the analysis sample size and thereby allow for a more comprehensive analysis of program performance. Additionally, program personnel should pay careful attention to ensure that participants are completing all the questions within each section that they begin.

In future programs, however, all Magnet Centers would do well to try to increase the number of adult men who participate in Hearts N' Parks. Across all 26 adult programs, only 114 of the participants were men—an average of about 4 per program.

Overall, though, the results of this report demonstrate that the 2002 Hearts N' Parks program has met each of its three performance objectives. With the development of the Web-based tracking and reporting system, and a multitude of park and recreation department programs that have proved they can effect heart-healthy change in people of all ages, a strong foundation is in place for the continued success of Hearts N' Parks.

IX. Appendix

The following tables include the average scores of all individual items within the different sections of the questionnaires. Every item answered in each questionnaire reviewed from all 68 programs is counted, without regard to whether participants completed both pretest and posttest. All percentage scores represent the percentage of correct or healthy answers chosen for that item. Other scoring measurements are indicated by section.

For example, in the first section below, a total of 1,005 children answered the first question in the pretest section "Heart-Healthy Eating Knowledge." A total of 90.3 percent answered the question correctly, and the standard deviation of scores was 0.295.

Children's Questionnaire Items

		N	Mean Score	Std. Deviation
Pretest Heart-Healthy Eating Knowledge				
	1	1005	90.3%	0.295
	2	1016	93.3%	0.250
	3	1011	59.5%	0.491
	4	1001	48.2%	0.500
	5	980	54.5%	0.498
	6	966	81.5%	0.389
	7	973	93.4%	0.248
Posttest Heart-Healthy Eating Knowledge				
	1	928	90.8%	0.289
	2	934	92.3%	0.267
	3	932	75.8%	0.429
	4	923	65.4%	0.476
	5	928	70.6%	0.456
	6	922	88.8%	0.315
	7	923	95.1%	0.215
Pretest Heart-Healthy Eating Behavior				
	1	995	40.6%	0.491
	2	996	57.2%	0.495
	3	1001	63.4%	0.482
	4	988	39.8%	0.490
	5	993	60.9%	0.488
	6	981	41.8%	0.493
	7	985	38.2%	0.486
Posttest Heart-Healthy Eating Behavior				
	1	926	58.6%	0.493
	2	929	71.6%	0.451
	3	930	72.6%	0.446
	4	924	50.2%	0.500
	5	920	71.8%	0.450
	6	918	56.9%	0.496
	7	925	58.1%	0.494

Children's Questionnaire Items

		N	Mean Score	Std. Deviation
Pretest Heart-Healthy Eating Intention				
	1	1068	35.1%	0.478
	2	1043	64.6%	0.478
	3	1047	28.3%	0.451
	4	1062	31.5%	0.465
	5	1067	69.2%	0.462
	6	1058	54.3%	0.498
	7	1061	29.3%	0.455
Posttest Heart-Healthy Eating Intention				
	1	933	54.0%	0.499
	2	917	78.1%	0.414
	3	920	56.2%	0.496
	4	929	57.9%	0.494
	5	926	80.6%	0.396
	6	922	69.8%	0.459
	7	928	59.3%	0.492
Pretest Physical Activity Attitude (0–2 pts. each)				
	1	1145	1.15	0.751
	2	1142	1.72	0.580
	3	1144	1.53	0.664
	4	1141	1.34	0.774
	5	1144	1.48	0.683
	6	1138	1.73	0.528
Posttest Physical Activity Attitude				
	1	932	0.99	0.830
	2	929	1.76	0.558
	3	932	1.63	0.597
	4	932	1.53	0.668
	5	932	1.52	0.643
	6	932	1.74	0.501

Things I Like and Things I Do N=1106

Pretest	I Like To Do This	I've Done This in the Past Week	I Would Like To Learn How To Do This
Softball/baseball	62.7%	26.2%	21.4%
Basketball	67.2%	34.5%	19.8%
Biking	73.9%	33.0%	12.0%
Bowling	70.9%	21.0%	16.6%
Dancing	49.1%	27.7%	21.7%
Exercises	65.6%	48.3%	9.4%
Football	52.9%	25.0%	26.6%
Games	74.7%	44.6%	13.9%
Jump rope	61.1%	32.7%	18.7%
Rollerskating	67.3%	24.5%	19.8%
Soccer	65.7%	30.3%	18.4%
Swimming	76.7%	40.8%	13.1%
Tennis	48.6%	19.8%	31.0%
Volleyball	52.4%	22.7%	29.2%
Average Number of Activities	**8.89**	**4.31**	**2.72**

Things I Learned and Did This Summer N=1106

Posttest	Something New I Learned	I Got Better at This	I Would Like To Play This Again
Softball/baseball	37.3%	50.3%	38.7%
Basketball	33.9%	54.3%	45.5%
Biking	31.9%	44.2%	43.0%
Bowling	34.1%	49.6%	40.5%
Dancing	32.9%	40.2%	31.3%
Exercises	36.0%	63.7%	38.6%
Football	31.3%	46.6%	41.4%
Games	39.0%	54.3%	67.9%
Jump rope	33.8%	55.2%	39.5%
Rollerskating	32.7%	45.6%	40.7%
Soccer	35.6%	52.2%	42.4%
Swimming	37.4%	50.9%	42.5%
Tennis	37.2%	44.9%	33.5%
Volleyball	37.6%	31.4%	34.3%
Average Number of Activities	**4.91**	**6.83**	**5.80**

Adolescent Questionnaire Items

		N	Mean Score	Std. Deviation
Pretest Heart-Healthy Eating Knowledge				
	1	137	67.2%	0.471
	2	146	59.6%	0.492
	3	148	83.1%	0.376
	4	148	56.8%	0.497
	5	129	92.2%	0.268
	6	131	93.1%	0.254
	7	132	82.6%	0.381
	8	130	56.2%	0.498
	9	136	73.5%	0.443
	10	139	86.3%	0.345
	11	132	87.1%	0.336
	12	131	86.3%	0.346
Posttest Heart-Healthy Eating Knowledge				
	1	95	71.6%	0.453
	2	90	91.1%	0.286
	3	91	93.4%	0.250
	4	90	86.7%	0.342
	5	99	61.6%	0.489
	6	99	85.9%	0.350
	7	99	69.7%	0.462
	8	91	92.3%	0.268
	9	91	90.1%	0.300
	10	90	78.9%	0.410
	11	91	67.0%	0.473
	12	92	77.2%	0.422
Pretest Overweight/Obesity Knowledge				
	1	117	31.6%	0.467
	2	119	47.1%	0.501
	3	119	84.9%	0.360
	4	119	62.2%	0.487
	5	119	73.9%	0.441
	6	119	86.6%	0.343
	7	119	42.0%	0.496
	8	119	57.1%	0.497
	9	119	52.9%	0.501
Posttest Overweight/Obesity Knowledge				
	1	86	54.7%	0.501
	2	88	59.1%	0.494
	3	88	90.9%	0.289
	4	88	64.8%	0.480
	5	88	81.8%	0.388
	6	87	85.1%	0.359
	7	86	52.3%	0.502
	8	86	70.9%	0.457
	9	86	60.5%	0.492

Adolescent Questionnaire Items

		N	Mean Score	Std. Deviation
Pretest Heart-Healthy Eating Attitude (1–4 pts. each)				
	1	150	2.88	0.819
	2	150	3.01	0.986
	3	150	2.95	0.915
	4	148	2.44	0.977
	5	148	2.11	1.004
	6	150	3.13	0.964
	7	148	2.16	0.983
	8	148	2.20	0.886
	9	150	2.72	0.977
	10	150	3.25	0.969
Posttest Heart-Healthy Eating Attitude				
	1	98	2.95	0.866
	2	99	3.02	0.845
	3	98	2.91	0.774
	4	99	2.78	0.875
	5	99	2.95	1.053
	6	99	3.36	0.839
	7	99	2.58	1.011
	8	98	2.61	0.948
	9	98	2.86	0.919
	10	98	3.39	0.727
Pretest Overweight/Obesity Attitude (1–4 pts. each)				
	1	148	2.93	0.923
	2	148	2.84	0.995
	3	148	2.42	0.926
	4	148	2.55	1.071
	5	149	3.00	0.893
	6	149	2.29	1.022
	7	149	2.48	1.004
	8	147	2.70	1.119
Posttest Overweight/Obesity Attitude				
	1	97	2.44	1.041
	2	97	2.52	1.062
	3	97	2.28	0.898
	4	95	2.21	1.061
	5	97	2.53	0.948
	6	96	2.23	0.934
	7	97	2.34	0.912
	8	97	2.37	1.112
Pretest Heart-Healthy Eating Behavior				
	1	136	25.7%	0.439
	2	137	34.3%	0.476
	3	131	32.1%	0.469
	4	130	36.9%	0.484
	5	131	50.4%	0.502
	6	133	36.1%	0.482
	7	128	50.8%	0.502
	8	134	41.8%	0.495

Adolescent Questionnaire Items

		N	Mean Score	Std. Deviation
Posttest Heart-Healthy Eating Behavior				
	1	91	53.8%	0.501
	2	93	61.3%	0.490
	3	94	51.1%	0.503
	4	91	50.5%	0.503
	5	92	65.2%	0.479
	6	93	57.0%	0.498
	7	90	65.6%	0.478
	8	91	48.4%	0.502
Pretest Heart-Healthy Eating Intention				
	1	149	32.9%	0.471
	2	148	74.3%	0.438
	3	144	28.5%	0.453
	4	148	36.5%	0.483
	5	145	50.3%	0.502
	6	150	55.3%	0.499
	7	148	33.8%	0.475
Posttest Heart-Healthy Eating Intention				
	1	96	57.3%	0.497
	2	97	83.5%	0.373
	3	94	37.2%	0.486
	4	95	46.3%	0.501
	5	95	67.4%	0.471
	6	96	63.5%	0.484
	7	95	60.0%	0.492
Pretest Physical Activity Level (0–1 pts. for 1, 2, 3, and 5; 0–2 pts. for 4)				
	1	149	0.77	0.421
	2	149	0.50	0.502
	3	137	0.28	0.453
	4	145	1.23	0.825
	5	146	0.65	0.478
Posttest Physical Activity Level				
	1	98	0.81	0.397
	2	98	0.52	0.502
	3	94	0.40	0.493
	4	97	1.39	0.811
	5	98	0.68	0.467

Adult Questionnaire Items

		N	Mean Score	Std. Deviation
Pretest Heart-Healthy Eating Knowledge				
	1	467	77.7%	0.417
	2	463	41.3%	0.493
	3	464	87.9%	0.326
	4	447	32.0%	0.467
	5	467	62.5%	0.485
	6	468	71.6%	0.452
Posttest Heart-Healthy Eating Knowledge				
	1	294	86.7%	0.340
	2	289	48.8%	0.501
	3	290	91.4%	0.281
	4	286	43.0%	0.496
	5	296	72.3%	0.448
	6	296	81.8%	0.387
Pretest Overweight/Obesity Knowledge				
	1	460	33.9%	0.474
	2	464	56.9%	0.496
	3	471	97.7%	0.151
	4	469	81.7%	0.387
	5	470	92.3%	0.266
	6	469	97.0%	0.170
	7	469	13.2%	0.339
	8	468	90.6%	0.292
	9	468	42.3%	0.495
Posttest Overweight/Obesity Knowledge				
	1	290	41.0%	0.493
	2	295	62.7%	0.484
	3	297	99.0%	0.100
	4	293	87.4%	0.333
	5	295	95.6%	0.206
	6	296	97.6%	0.152
	7	294	19.0%	0.393
	8	296	95.9%	0.198
	9	294	46.3%	0.499
Pretest Heart-Healthy Eating Attitude (1–4 pts. each)				
	1	470	3.51	0.729
	2	462	3.41	0.722
	3	470	3.76	0.528
	4	468	3.32	0.775
	5	465	2.63	0.891
	6	472	2.88	0.929

Adult Questionnaire Items

		N	Mean Score	Std. Deviation
Posttest Heart-Healthy Eating Attitude				
	1	291	3.66	0.609
	2	292	3.54	0.616
	3	293	3.85	0.364
	4	293	3.47	0.690
	5	293	2.72	0.920
	6	292	3.13	0.878
Pretest Overweight/Obesity Attitude (1–4 pts. each)				
	1	470	2.74	0.910
	2	467	3.02	0.815
	3	471	2.70	0.890
	4	470	2.62	0.912
	5	464	2.96	0.840
	6	469	2.55	0.867
	7	472	2.88	0.799
	8	467	3.03	0.828
Posttest Overweight/Obesity Attitude				
	1	298	2.87	0.851
	2	294	3.10	0.703
	3	293	2.83	0.829
	4	297	2.75	0.809
	5	296	3.04	0.724
	6	296	2.58	0.844
	7	298	2.96	0.705
	8	298	3.08	0.754
Pretest Heart-Healthy Eating Behavior (0–4 pts each)				
	1	297	1.68	1.487
	2	440	2.55	1.662
	3	447	1.78	1.377
	4	434	1.96	1.315
	5	452	2.11	1.388
	6	452	2.21	1.104
	7	456	2.59	0.947
Posttest Heart-Healthy Eating Behavior				
	1	181	1.73	1.425
	2	285	2.81	1.530
	3	286	2.06	1.360
	4	279	2.25	1.308
	5	288	2.39	1.352
	6	291	2.36	0.978
	7	294	2.68	0.905

Adult Questionnaire Items

		N	Mean Score	Std. Deviation
Pretest Physical Activity Level (1–5 are 0–1 pt. each; 6 is 0–4 pts.; 7 is 0–3 pts.)				
	1	492	0.70	0.458
	2	489	0.85	0.359
	3	492	0.58	0.494
	4	493	0.48	0.500
	5	489	0.69	0.462
	6	488	1.92	1.269
	7	493	0.71	0.930
Posttest Physical Activity Level				
	1	330	0.83	0.379
	2	328	0.83	0.379
	3	325	0.79	0.410
	4	328	0.61	0.489
	5	324	0.71	0.455
	6	329	2.29	1.280
	7	327	1.02	1.026
Pretest Physical Activity Attitude (1–4 pts each)				
	1	470	2.50	1.076
	2	482	2.32	1.113
	3	485	3.26	0.943
	4	480	3.33	0.977
	5	482	3.40	0.986
	6	482	3.09	1.007
	7	486	3.08	1.074
	8	484	2.62	1.131
	9	482	3.22	1.023
	10	482	3.00	1.042
	11	484	2.46	1.115
	12	488	3.01	1.023
	13	485	3.38	0.975
	14	460	2.88	1.169
Posttest Physical Activity Attitude				
	1	310	2.78	0.990
	2	321	2.72	1.082
	3	321	3.34	0.915
	4	320	3.52	0.849
	5	318	3.43	0.959
	6	321	3.29	0.895
	7	320	3.39	0.889
	8	324	2.93	1.056
	9	322	3.31	0.994
	10	323	3.13	0.974
	11	320	2.76	1.046

Adult Questionnaire Items

		N	Mean Score	Std. Deviation
	12	320	3.28	0.902
	13	321	3.46	0.866
	14	271	2.93	1.176
Pretest Physical Activity Knowledge				
	1	493	95.3%	0.211
	2	492	94.3%	0.232
	3	490	84.3%	0.364
	4	493	93.3%	0.250
	5	488	36.7%	0.482
	6	491	84.7%	0.360
	7	494	92.7%	0.260
	8	495	86.1%	0.347
	9	495	88.1%	0.324
	10	493	87.0%	0.336
	11	490	85.1%	0.356
	12	494	96.2%	0.193
Posttest Physical Activity Knowledge				
	1	316	98.1%	0.137
	2	317	98.1%	0.136
	3	315	95.2%	0.213
	4	316	95.3%	0.213
	5	314	45.2%	0.499
	6	316	89.6%	0.306
	7	317	96.8%	0.175
	8	317	90.2%	0.298
	9	316	95.6%	0.206
	10	316	96.2%	0.191
	11	316	85.4%	0.353
	12	316	96.5%	0.184
Pretest High Blood Pressure Knowledge				
	1	477	93.7%	0.243
	2	473	14.2%	0.349
	3	466	51.7%	0.500
	4	473	70.8%	0.455
	5	469	62.9%	0.484
	6	470	7.0%	0.256
	7	462	60.8%	0.489
	8	474	72.6%	0.447
	9	473	83.7%	0.370
	10	471	79.4%	0.405
	11	466	41.8%	0.494
	12	475	8.0%	0.272
	13	476	82.1%	0.383
	14	469	87.0%	0.337

Adult Questionnaire Items

		N	Mean Score	Std. Deviation
Posttest High Blood Pressure Knowledge				
	1	299	94.3%	0.232
	2	302	18.9%	0.392
	3	295	59.3%	0.492
	4	301	71.1%	0.454
	5	294	70.7%	0.456
	6	301	16.6%	0.373
	7	300	64.3%	0.480
	8	303	79.5%	0.404
	9	301	92.4%	0.266
	10	301	80.7%	0.395
	11	301	50.2%	0.501
	12	300	18.7%	0.390
	13	303	85.1%	0.356
	14	302	90.1%	0.300
Pretest Cholesterol Knowledge				
	1	476	84.7%	0.361
	2	479	86.4%	0.343
	3	478	84.3%	0.364
	4	475	78.1%	0.414
	5	475	84.6%	0.361
	6	475	77.5%	0.418
	7	476	93.7%	0.243
	8	475	64.2%	0.480
	9	475	17.5%	0.380
	10	468	23.7%	0.426
	11	474	97.3%	0.163
	12	474	73.6%	0.441
Posttest Cholesterol Knowledge				
	1	294	88.1%	0.324
	2	298	90.6%	0.292
	3	298	90.6%	0.292
	4	295	80.0%	0.401
	5	298	89.9%	0.301
	6	296	84.1%	0.366
	7	296	95.6%	0.205
	8	297	77.1%	0.421
	9	298	24.5%	0.431
	10	298	33.6%	0.473
	11	297	98.7%	0.115
	12	297	83.8%	0.369