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Be a Fit Kid: Nutrition and Physical Activity for the Fourth Grade

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This article describes the inclusion of Be a Fit Kid in the fourth-grade curriculum. Be a Fit Kid is a fitness-emphasized physical activity and heart-healthy nutrition education program for elementary school children. Five parent–education lessons were offered and nutrition workbooks were distributed to parents. Following the 10-week intervention, significant improvements in fitness, body fat, nutrition knowledge, dietary habits, and levels of lipids and lipoproteins were observed in the intervention group compared with baseline levels. Changes in fitness, body fat, and nutrition knowledge were significant compared with the control group. These findings suggest that comprehensive physical activity and nutrition programs included in the school curriculum may be effective for improving cardiovascular health and reducing future risk for lifestyle-related diseases.

Keywords: *health promotion for children; disease prevention for children; school-based nutrition education; school-based physical activity*

Poor dietary habits and lack of physical activity in American youth have increased the risk for early onset of heart disease and Type 2 diabetes, and is a growing concern among health care professionals. Recent reports estimate that 25% of American children have risk factors for heart disease, such as high levels of blood cholesterol or high blood pressure (Freedman, Dietz, Srinivasan, & Berenson, 1999), only 2% of children meet the recommendations outlined in the Dietary Guidelines for Americans (National Heart, Lung, and Blood Institute [NHLBI], 1980), 84% exceed recommendations for saturated fat intake (U.S. Department of Agriculture, 2001), one third of children are overweight and one in seven is obese (Ogden, Flegal, Carroll, & Johnson, 2002), and the incidence of Type 2 diabetes among adolescents has increased 10-fold over the past 20 years (Pinhas-Hamiel et al., 1996).

With the increasing rise in obesity and risk for early heart disease and diabetes among American children, school districts across the country are creating wellness policies requiring that schools incorporate nutrition education in the classroom curriculum, increase the offerings of heart-healthy foods in the cafeteria, and provide more opportunities for physical activity during the school day. Many school districts across the country have adopted nutrition and physical activity programs for implementation by classroom teachers. Some of the more nationally recognized programs include the Coordinated Approach to Children's Health (CATCH), Sports, Play, and Active Recreation for Kids (SPARK), Planet Health, NikeGo, Eat Healthy Get Active, and Know Your Body; and innovative programs such as Peer Power in which high school students serve as health educators for middle school students are continually gaining recognition. Be a Fit Kid, an individualized and noncompetitive physical activity and nutrition program, was initially piloted as an after-school activity in four Southern Oregon elementary schools (Slawta et al., 2006). Based on the success of the after-school pilot trial, Be a Fit Kid was expanded to the fourth -grade curriculum in one southern Oregon school district. Be a Fit Kid is recognized as a NHLBI "We Can" community site. The PRECEDE-PROCEED model (Green & Kreuter, 1991), a nine-step organizational planning process, was used in the design of Be a Fit Kid (Slawta et al., 2006). The purpose of this article is to (a) describe the Be a Fit Kid program and its inclusion into the fourth-grade curriculum and (b) determine the efficacy of the

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program by examining health-related improvements following 10 weeks of intervention.

METHOD

Participants

Intervention participants were students from the fourth grade (n = 45) at one elementary school. Measurements for the mile run, sit-ups, and nutrition knowledge were part of the curriculum and all students participated in those measurements, unless they were absent on testing day ($n \geq 41$). Measurements for body composition (n = 29), lipids and lipoproteins (n = 20), and dietary habits (n = 23) were voluntary and required parent consent. Control participants were fourth-grade students (n = 20) from another school (16 students had their blood drawn for lipid and lipoprotein measurements, 20 participated in the nutrition knowledge test, 14 completed 24-hour food logs, and 19 participated in measurements for fitness and body composition). The study was approved through the Institutional Review Board at Southern Oregon University and Rogue Valley Medical Center. The intervention was conducted in a primarily White, rural community.

PRECEDE-PROCEED Model

The planning, design, and implementation of Be a Fit Kid followed the basic organizational framework of the PRECEDE-PROCEED model (Green & Kreuter, 1999). The first two steps in designing Be a Fit Kid involved an examination of the recent data identifying the dramatic increases in obesity, Type 2 diabetes, and heart disease in American youth over the past two decades, and what other communities have done to address these health issues. In Step 3 of the PRECEDE-PROCEED model, existing behavior factors of children (physical activity and dietary habits) and environmental factors (foods sold in school cafeterias, health-behavior habits of school staff and parents, and current nutrition and physical education curriculum) in our schools were assessed. Because the policies and practices of schools can be identified as environmental factors and because the behavioral factors of physical activity and dietary habits among children are largely influenced by the school environment, the long-term effectiveness of physical activity and nutrition programs such as Be A Fit Kid is dependent on policy and organizational change at the institutional level to increase the opportunities for physical activity, include nutrition education in the school curriculum, and increase the availability of heart-healthy foods in the schools.

Predisposing, enabling, and reinforcing factors that would influence the likelihood of behavioral and environmental change were identified in Step 4 of the PRECEDE-PROCEED model. Predisposing factors included knowledge, attitudes, and beliefs relating to physical activity and dietary habits among parents and children. Enabling factors included the inclusion of daily noncompetitive and individualized physical activity, inclusion of nutrition education in the curriculum, availability of heart-healthy school cafeteria meals and foods sold at school functions, elimination of candy and unhealthy food rewards in the classroom, school staff education and training in health promotion and program implementation, and parent education and involvement. Reinforcing factors included healthy food tasting, weekly raffle of healthy prizes, healthy rewards and plastic medals for goals accomplished, school staff, peer, and parent support; and praise.

After identifying the predisposing, enabling, and reinforcing factors that would influence behavioral and environmental change relating to children's physical activity and eating habits, Be A Fit Kid was designed and implemented initially as an after-school program (Steps 5 and 6 of the PRECEDE-PROCEED model). Evaluation of the Be a Fit Kid after-school pilot program (Steps 7 and 9 of the PRECEDE-PROCEED model) provided valuable data that demonstrated the effectiveness of the intervention and, as described in this article, led to the inclusion of Be a Fit Kid in the fourth-grade curriculum.

Protocol

Physical activity. The physical activity component of Be a Fit Kid was offered three times each week for 40 minutes each session for 10 weeks and emphasized cardiovascular fitness, muscular strength, and bone development through running activities, block jumping, and strength-training exercises. Fitness activities were noncompetitive in that children received individualized workouts and interval goals each session. Children received

colorful fitness-related tokens as incentives as they accumulated laps on the track and met their individualized interval goals. In addition to the physical activity that the children received through their participation in the Be a Fit Kid program, children participating in the control and intervention groups received regular physical education from the same physical education teacher two times each week for 30 minutes.

Nutrition. Nutrition education was offered once each week for 45 minutes for 10 weeks and focused on current dietary guidelines that emphasize a diet rich in whole grains, vegetables, fruits, legumes, low-fat dairy foods, and foods high in omega-3 fats, and low in saturated fat, trans fat, sugar, and refined foods. Nutrition education materials used included nutrition workbooks, food displays, heart models, posters, and nutrition bingo. Healthy foods were offered to the children each week. The food-tasting portion of each session reflected the information delivered during the nutrition education portion of the session. A weekly raffle of healthful foods and vegetable/fruit beanie babies was held each week.

Parent involvement. Parents of children participating in Be a Fit Kid were asked to attend five bimonthly parent meetings that covered nutrition and physical activity principles. All parents who had children participating in the program received a nutrition education workbook.

Measurements

Fitness. The timed mile run and number of sit-ups in 60 seconds were administered before and after the intervention.

Nutrition knowledge and diet composition. Nutrition knowledge was assessed through administration of a simple 20-question nutrition test about green, yellow, and red light foods, and heart-healthy foods (whole grains, monounsaturated and omega 3 fats, vegetables, fruits, and lean protein foods). Diet composition was assessed by analyzing 24-hour food logs using Diet Analysis Plus 6.0 (2003) software and a simple 10-question "yes/no" questionnaire was distributed to intervention parents following the intervention to assess changes made in eating habits by their children during the program.

Body composition. Body weight and height were measured in light clothing without shoes to calculate body mass index (BMI). Skinfold thicknesses were measured with a Lange skinfold caliper at three sites on the right side of the body (triceps, subscapular, and calf). Total body fat was calculated by taking the average body fat obtained from two equations developed for children (Slaughter et al., 1988).

Lipids and lipoproteins. Venous blood was collected in the morning by venipuncture following a 12-hour fast. Levels of metabolic variables were analyzed by Rogue Valley Medical Center. Quality control of the Rogue Valley Medical Center laboratory is monitored by the Lipid Standardization Program of the Centers for Disease Control and Prevention. Measurements of lipids and lipoprotein-cholesterol were within specific limits established by the Lipid Standardization Program of the Centers for Disease Control and Prevention.

Statistics. Exact probability and independent *t* tests were used to compare baseline dependent variables (fitness, dietary habits, body composition, levels of lipid and lipoprotein levels) for the control group and the intervention group. Changes in group scores in fitness, dietary habits, nutrition knowledge, body composition, and levels of lipids and lipoproteins were analyzed by using independent *t* tests to determine whether changes in the intervention group were different from changes in the control group following the intervention. Changes between baseline and postintervention within the control and intervention groups for these same measurements were determined using paired *t* tests.

RESULTS

All 45 children completed the Be a Fit Kid program. Of the participants who participated in baseline measurement testing, between 75% and 100% of participants in the intervention group, and between 56% and 95% of participants in the control group completed postintervention measurements for levels of lipids/lipoproteins, body composition, fitness, dietary habits, and nutrition knowledge. Reasons for lack of participation in postintervention blood draws included fainting during the baseline blood draw, absence during the testing day, food intake prior to the blood draw, and relocation.

With the exception of nutrition knowledge, baseline health-related variables were comparable between the intervention and control groups (data not shown). We believe that the intervention group scored higher on the nutrition knowledge test at baseline because their nutrition knowledge test was administered in the classroom at baseline whereas the control group took their nutrition knowledge test on the running track outside on a windy day after completing the mile run fitness

test. Postintervention tests for both the intervention and control groups took place in the classroom.

At baseline, before the Be a Fit Kid intervention, more than 75% of fourth-grade intervention students were unable to meet national norms for the mile run (Ross, 1987), almost half exceeded recommendations for saturated fat intake (Expert Panel on Detection, Evaluation, and Treatment, 2001), more than 25% exceeded recommendations for BMI (Whitney & Rolfes, 2002) and body fat (Heyward & Stolarczyk, 1996), and more than one third had high levels of total cholesterol and low-density lipoprotein cholesterol (LDL-C), and low levels of high-density lipoprotein cholesterol (HDL-C; National Cholesterol Education Program, 1992; data not shown).

Significant improvements were observed in participants' mile run time $t(38) = 6.57$; $p < .01$; $r^2 = .53$, sit-ups $t(38) = -11.64$; $p < .01$; $r^2 = .78$, saturated fat intake $t(20) = 3.55$; $p < .01$; $r^2 = .39$, sodium intake $t(20) = 2.19$; $p < .05$; $r^2 = .19$, body fat $t(29) = 2.95$; $p < .01$; $r^2 = .23$, nutrition knowledge $t(42) = -9.43$; $p < .00$; $r^2 = .68$, total cholesterol $t(14) = 3.93$; $p < .01$; $r^2 = .52$, LDL-C $t(14) = 3.53$; $p < .01$; $r^2 = .47$, and the total cholesterol-to-HDL-C ratio $t(14) = 3.01$; $p < .01$; $r^2 = .39$ in the intervention group following 10 weeks of participation in the Be a Fit Kid program compared with baseline values (Table 1). Comparing the intervention group to the control group revealed significant differences in the mile run time $t(52) = -5.67$; $p < .01$; $r^2 = .38$, sit-ups $t(52) = 6.42$; $p < .01$; $r^2 = .44$, body fat $t(46) = -2.07$; $p < .05$; $r^2 = .08$, and nutrition knowledge $t(59) = 2.57$; $p < .05$; $r^2 = .10$. With the exception of nutrition knowledge $t(17) = -3.04$; $p < .01$; $r^2 = .35$, there were no significant changes in any of the variables in the control group relative to baseline values.

Approximately 66% of intervention parents completed the simple 10-item yes/no dietary questionnaire following their child's participation in Be a Fit Kid. Based on the questionnaire, the majority of children improved their dietary habits by increasing their intake of vegetables, fruits, whole grains, healthy fats, and water, and reducing their intake of foods high in saturated fat and sugar following participation in the fourth grade inclusion of Be a Fit Kid (data not shown).

DISCUSSION

The need for physical activity and nutrition programs in the school curriculum is evident based on the increasing rates of obesity among American youth and increasing incidence of Type 2 diabetes and heart disease in adolescents and young adults. This study examined the changes in heart-healthy behaviors among fourth graders in one school who received the Be a Fit Kid program as part of their classroom curriculum. Our findings indicate that the inclusion of Be a Fit Kid into the fourth grade curriculum was successful in improving heart disease risk factors among participating children. Based on feedback from parents, teachers, and school administration, the program was well-received.

Large-scale interventions, such as the CATCH (Edmundson et al., 1996) and the Heart Smart Cardiovascular School Health Program (Arbeit et al., 1992) have been successful in improving dietary and physical activity habits among elementary school children through a multicomponent approach, including nutrition education, physical fitness activities, heart-healthy cafeteria foods, school staff training, and parent education. Findings from the first Cardiovascular Health in Children study (CHIC I; Harrell, McMurray, Gansky, Bangdiwala, & Bradely, 1999) indicated that heart-focused nutrition education delivered in the third- and fourth-grade curriculum was easily adapted into the classroom setting and was more effective overall than delivering the program exclusively to children with known heart disease risk factors.

More recent school-based health behavior interventions have been introduced into the classroom with varying degrees of success in improving physical activity and dietary habits among participants. Planet Health was initially integrated in the academic curriculum of Boston Middle Schools with the primary aim to reduce obesity among students by (a) increasing energy expenditure through increasing physical activity and reducing television viewing, and (b) improving dietary habits by decreasing consumption of high fat foods and increasing consumption of fruits and vegetables (Gortmaker et al., 1999). Significant reductions in BMI among female students were observed, but no significant changes in BMI were observed in male students. Eat Healthy Get Active was implemented in four Rhode Island elementary schools after conducting a needs assessment in more than 100 Rhode Island elementary schools (Pearlman, Dowling, Bayuk, Cullinen, & Thacher, 2005). Following the 1-year Eat Healthy Get Active intervention, two of the four schools were able to implement two small, sustainable health-behavior changes. Peer Power used an innovative approach to health promotion education by training high school students to administer a disease prevention program to middle school students (Thomas & Ward, 2006). Based on interviews with staff and participants, the Peer Power curriculum was more relevant and interesting for middle school students when provided by high school mentors.

TABLE 1
Changes (Mean ± Standard Deviation) in Fitness, Dietary Habits, Nutrition Knowledge, Body Composition, and Lipids and Lipoproteins After 10 Weeks of Intervention

Variable	*Baseline*	*Postintervention*	*Change (%)*
Mile run time (min)			
Control group (n = 15)	13:37 ± 2:49	15:52 ± 4:14	+17
Intervention group (n = 39)	13:20 ± 3:57	10:14 ± 2:13	−23[ab]
Sit-ups (no. in 60 s)			
Control group (n = 15)	35.5 ± 8.1	34.8 ± 5.8	−2
Intervention group (n = 39)	32.6 ± 8.8	42.4 ± 11.1	+30[ab]
Saturated fat (% total calories)			
Control group (n = 11)	11.3 ± 4.1	11.0 ± 2.4	−3
Intervention group (n = 21)	9.9 ± 2.9	8.0 ± 3.1	−19[a]
Monounsaturated fat (% total calories)			
Control group (n = 11)	7.5 ± 3.9	6.2 ± 2.3	−8
Intervention group (n = 21)	6.9 ± 4.2	8.5 ± 4.3	+23
Cholesterol (mg)			
Control group (n = 11)	234.7 ± 195.6	290.6 ± 272.8	+24
Intervention group (n = 21)	201.3 ± 131.0	169.4 ± 109.6	−16
Sodium (mg)			
Control group (n = 11)	2805.7 ± 1266.2	3018.5 ± 1160.0	+8
Intervention group (n = 21)	2603.0 ± 815.7	2200.2 ± 805.3	−15[a]
Nutrition knowledge (% correct)			
Control group (n = 18)	52.2 ± 11.1	64.7 ± 15.6	+24[a]
Intervention group (n = 43)	65.2 ± 16.8	90.5 ± 14.5	+39[ac]
Body mass index (kg/m^2)			
Control group (n = 18)	17.9 ± 3.1	17.7 ± 2.9	−1
Intervention group (n = 31)	17.7 ± 2.8	17.7 ± 2.6	0
Body fat (%)			
Control group (n = 17)	21.6 ± 7.1	21.7 ± 7.1	0
Intervention group (n = 30)	21.2 ± 7.7	19.9 ± 7.7	−6[ad]
Total cholesterol (mmol/L)			
Control group (n = 9)	4.12 ± 0.70	3.95 ± 0.68	−4
Intervention group (n = 15)	4.44 ± 1.01	3.86 ± 0.76	−13[a]
LDL cholesterol (mmol/L)			
Control group (n = 9)	2.45 ± 0.53	2.25 ± 0.55	−8
Intervention group (n = 15)	2.73 ± 0.79	2.27 ± 0.59	−17[a]
HDL cholesterol (mmol/L)			
Control group (n = 9)	1.37 ± 0.25	1.36 ± 0.21	−1
Intervention group (n = 15)	1.41 ± 0.42	1.35 ± 0.29	−4
Total cholesterol/HDL			
Control group (n = 9)	3.1 ± 0.6	2.9 ± 0.3	−6
Intervention group (n = 15)	3.3 ± 0.9	2.9 ± 0.6	−12[a]
Triglycerides (mmol/L)			
Control group (n = 9)	0.64 ± 0.31	0.75 ± 0.20	+17
Intervention group (n = 15)	0.64 ± 0.43	0.53 ± 0.25	−17

Note: Values are means ± SD. LDL = low-density lipoprotein; HDL = high-density lipoprotein.
a. Different from baseline ($p < .01$).
b. Change from baseline is different from controls ($p = .000$).
c. Change from baseline is different from controls ($p = .01$).
d. Change from baseline is different from controls ($p < .05$).

From the public health perspective, long-term success of any nutrition and physical activity intervention targeted toward youth is dependent on institutionalization and sustainability of the intervention over time. Although the CATCH intervention was initially successful in reducing saturated fat and total fat intake, and increasing physical activity behaviors among elementary school students participating in the initial research-based intervention of CATCH (Edmundson et al., 1996), implementation of CATCH by classroom teachers was minimal 5 years following the program's institutionalization in that only 1.5 lessons were delivered by participating elementary school teachers out of an average of 12 lessons, and adherence to the curriculum took place less than half the time (Hoelscher et al., 2004). Lack of time and importance in comparison with other academic curriculum were cited by classroom teachers as reasons for their minimal implementation of the CATCH curriculum. Planet Health evaluation also reported lower than expected implementation of Planet Health curriculum by classroom teachers (Gortmaker et al., 1999). Given its uniqueness, evaluation of the institutionalization of Peer Power will be valuable in determining whether this kind of intervention can be maintained and sustained over time.

The institutionalization of school-based physical activity interventions may have more sustainability than the institutionalization of school-based nutrition interventions. SPARK is a widely disseminated physical education (PE) program that has shown promising implementation and sustainability over time (Dowda, Sallis, McKenzie, Rosengard, & Kohl, 2005). With the aim of improving health and skill-related fitness, SPARK PE lessons focus on maintaining a high level of activity among students during each PE session. One to 4 years following dissemination of SPARK materials, the institutionalization of SPARK curriculum revealed that of the surveys returned, 80% of SPARK users included the SPARK curriculum in more than 50% of their lessons. Greater use and adherence to SPARK curriculum was dependent on principal support and whether teachers were physically active themselves. The low response from participating schools (48%), however, suggests that schools not returning the evaluation surveys were not implementing SPARK to the same degree as schools that returned the surveys.

The model of Be a Fit Kid is similar to CATCH in its comprehensive, multicomponent approach to improving heart-healthy behaviors among children. Be a Fit Kid included individualized fitness activities three times each week, nutrition education once each week in the classroom, and five parent education meetings. The physical activity component of Be a Fit Kid focused on fitness activities in a positive, encouraging, and noncompetitive environment. The staff's main objective was to individualize the program to increase confidence and self-esteem in each child. The combination of the incentive program and individualizing the running workouts motivated children, removed competition between children, and made each child feel successful. The heart-healthy nutrition education component of Be a Fit Kid was supported through fun and interactive games such as green light bingo, label reading, healthful foods raffle, and exposure to and taste testing of healthy foods.

One unique feature of the Be a Fit Kid evaluation was the analysis of lipid and lipoprotein levels in fourth-grade students. Total cholesterol and LDL-C levels were reduced in both the control and intervention groups of Be a Fit Kid, but the magnitude of reduction was greater and significantly different from baseline in the intervention group. At baseline, 40% of children participating in the intervention group had LDL-C levels exceeding recommendations (NHLBI, 1980). Following Be a Fit Kid, 18.7% had LDL-C levels exceeding recommendations. Because high cholesterol levels in children most often persist into adulthood and are associated with the formation of coronary lesions, we believe that lipid and lipoprotein measurement for risk factor analysis of heart disease should be done routinely every 5 years for all children starting at age 9.

Reductions in LDL-C levels are most closely linked with reductions in dietary intake of saturated fat. Based on the 24-hour food log, significant reductions in saturated fat intake were observed in the intervention group following participation in Be a Fit Kid, but this reduction was not significantly different from the control group. The simple dietary questionnaire completed by intervention parents following the program regarding dietary changes made by their child indicated that more than 75% of children increased their intake of fruits and vegetables, and reduced their intake of saturated fat as evidenced by lower intakes of cheese and red meat. The questionnaire provided limited information, however, in that parents were asked to respond "yes" or "no" to questions relating to dietary changes (i.e., did your child increase his/her intake of vegetables). The extent by which changes were made was not addressed on the questionnaire.

A necessary, but often absent component of a successful nutrition and physical activity program for youth is parent involvement. Parents have the most influence over what their children eat because they are primarily responsible for food shopping and preparation, and research shows that children are six times more likely to be physically active if their parents are

physically active (Walters, Hollowman, Blomquist, & Bollier, 2003). Although parent involvement is critical to the success of youth health promotion programs, gaining parent support can be challenging. Only one third of parents attended all five of the bimonthly Be a Fit Kid parent education meetings. Despite less than desired attendance at the parent education meetings, many parents commented that although they were unable to attend the meetings, they were reading their nutrition workbooks and helping their children complete weekly nutrition assignments.

CATCH (Hoelscher et al., 2004) and Students and Parents Actively Involved in Being Fit (SPAIBF; Hermann, Gretebeck, Gretebeck, & Jimenz, 2005) also recognized the need for a parent component to be included in their interventions. Five-year evaluation of the institutionalization of the CATCH program, however, revealed infrequent dissemination and poor implementation by classroom teachers of the CATCH parent component (Hoelscher et al., 2004). The SPAIBF after-school program was more successful in involving parents than both Be a Fit Kid and CATCH because the framework of SPAIBF required that children and parents participate in the nutrition education and physical activity sessions together, and participate in pre- and postintervention measures relating to fitness and dietary habits. Postintervention measures for SPAIBF identified increases in fruit and vegetable consumption among children, improvements in fitness among parents, and reductions in blood pressure in both parents and children.

The present study was limited by the small sample size of children in both the control and intervention groups who participated in lipid and lipoprotein measurements. Although we realize the importance of a control group to compare and validate postintervention findings, the recruitment of child participants and overall adherence to all postintervention measurements, particularly the blood draw for lipid and lipoprotein measurements, is difficult to obtain in a field study such as presented in this article. Parents of children in both the intervention and controls groups were hesitant about having their child's blood drawn and only a portion of parents were convinced that lipid and lipoprotein measurements would provide important information about their child's long-term health. It was an even greater challenge to recruit children from the control school to participate in lipid and lipoprotein measurements. Few parents from the control school were receptive to having their child tested and measured without receiving the intervention.

CONCLUSION

Following the inclusion of Be a Fit Kid into the fourth-grade curriculum at one school and comparison to a control school as described in this article, Be a Fit Kid was expanded to all fourth-grade classrooms in the Ashland School District of southern Oregon. Baseline data from both the after-school pilot program and the fourth-grade inclusion of Be a Fit Kid identified a high proportion of children who were unfit, overweight, had poor dietary habits, and had unfavorable levels of lipids and lipoproteins. These findings are consistent with recent national estimates and emphasize the need for a combination of nutrition education, physical activity, and heart-healthy cafeteria meals in the schools.

The inclusion of Be a Fit Kid into the fourth-grade curriculum served as a pilot to determine the feasibility of and acceptance by school staff and administration for expansion of Be a Fit Kid into other grade levels. A sequential Grades 1 to 5 nutrition model of Be a Fit Kid has been created and is correctly being included in southern Oregon elementary school classrooms. Classroom teachers are trained through in-service days with on-site program assistance and college student volunteers help classroom and physical education teachers increase the time that children spend each day being physically active during school hours.

Collaborative efforts between universities, school districts, including teachers and administration, food services, parents, and the medical and business communities provide necessary support for successful implementation of school-based nutrition education and physical activity programs for children. Such programs have great potential to reduce obesity, Type 2 diabetes, heart disease, and other lifestyle-related diseases.

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