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# Kroc Fit Kids Needs Assessment

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### ***Needs Assessment***

Adulthood obesity is the second leading cause of preventable death in the United States (CHIP, 2008). Reports indicate that more than 61% of adults in the U.S. are obese or overweight (CHIP, 2008). According to the Centers for Disease Control, approximately 16.9% of all 2 to 19 year olds in the U.S., and more than 19% of 6 to 11 year olds, are obese (Ogden & Carrol, 2010). Research from three National Health and Nutrition Examination Surveys, from 1999 to 2004, show that the incidence of children who are overweight is increasing (as cited in CHIP, 2008). With one in four children in San Diego considered overweight, the obesity epidemic has serious health implications now and in the future (San Diego County Board of Supervisors, 2006). Being overweight or obese can lead to a host of health problems including cardiovascular disease and diabetes (Frieden, Dietz & Collins, 2010). In 2005 31% of students in grades 5, 7, and 9 in San Diego County were overweight (Community Health Improvement Partners [CHIP], 2008). The CDC, 2007 National Diabetes Fact Sheet, and CHIP state that if the current trends continue, one in three children born in the year 2000 and half of all Latino children will develop diabetes, which is the seventh leading cause of death in the U.S. (Center for Disease Control and Prevention, 2007).

A variety of factors may influence the increasing incidence of obese and overweight children, occurrence of diabetes, and lower percentage of 5<sup>th</sup> graders scoring in the Healthy Fitness Zone (HFZ) on the California Physical Fitness Test. According to CHIP (2008), some factors include increased consumption of soft drinks and fast foods, increased use of computers, video games, and TV, a lack of opportunity for physical activity at school, and communities and neighborhoods that lack opportunities for physical activity.

Research indicates that a lower percentage of 5<sup>th</sup> grade students in schools surrounding

the Rolando neighborhood of San Diego meet the health standards of the California Physical Fitness test than students at this grade-level county and statewide (California Department of Education Statewide Assessment Division, 2010). Low scores, indicating a low level of physical fitness, at this early age can lead to serious health problems in adulthood, such as obesity.

The Salvation Army Kroc Center, a 12.4-acre family support, education, recreation, and cultural arts center located in the Rolando neighborhood of San Diego, is interested in designing an intervention program to alleviate the issue of low levels of physical activity and combat the childhood obesity problem. The Kroc Center is well suited to designing such an intervention because it works closely with six partner elementary schools in its surrounding neighborhoods. To assist the Kroc Center in developing an intervention, this needs assessment examines factors that may lead to low fitness scores, and the potential dangers to students, and the community, if no intervention takes place.

The standardized California Physical Fitness Test (PFT) evaluates performance in six areas including cardiovascular fitness, body composition, muscle strength, muscular endurance, and flexibility (California Department of Education, n.d). Scores that fall within the test's Healthy Fitness Zone (HFZ) are associated with good health (Pangrazi & Corbin, 2008). Only 17% of 5<sup>th</sup> graders in the Kroc Center's partner schools can meet the standards on all areas on this test, far below the state average of 29% and the county average of 31.3% (California Department of Education Statewide Assessment Division, 2010).

The Kroc Center's six partner elementary schools are: Clay, Rolando Park, Vista La Mesa, Marshall, Ibarra and Audobon. The student bodies of these schools make up an economically and ethnically diverse population. Of the 2,735 students that attend these schools, 89% are considered socioeconomically disadvantaged, which means neither parent graduated

from high school, the student qualifies for the free or reduced school lunch program, or both (San Diego Unified School District [SDUSD], 2010). Households in the neighborhoods surrounding the partner schools are also considered low income with an average household income of \$46,000, which is just slightly more than 200% of the federal poverty rate for a family of four (California Department of Health Care Services, 2009). This puts the Kroc Center's demographic among only 16.8% of San Diego County children who live at this level of poverty (Center on Policy Initiatives, 2010).

The target population is also ethnically diverse with more than 50% of the students considered English learners (SDUSD, 2010). According to school reports, an average of 53% of students are Hispanic and 20% are African American (SDUSD, 2010). There is a significant disparity in the rate of obesity and overweight children among both of these ethnic and racial groups, with Mexican-Americans showing the highest rate of incidence, followed by African Americans (Ogden & Carrol, 2010).

**Primary Data:** To assess the needs for obesity prevention and increased physical activity in the partner schools, the research team found it important to utilize three types of interview tools: a focus group of 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> grade students, interviews with key informants such as physical education teachers, principals, and CHIP staff, and surveys with parents of 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> grade students. The focus group was conducted to explore the current physical exercise practices, activity interests, and motivations of 3<sup>rd</sup> through 5<sup>th</sup> grade students. Our key informant interviews were created to identify the current state of physical activity levels, available exercise programs, and physical education needs in the Kroc Center's partner schools. Lastly, we created a survey for parents to discover the assumed current state of physical activity levels, available

exercise activities and programs outside of school, and physical education needs in the partner schools based on the parents' perceptions.

For the focus group, the research team recruited ten students from the 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> grades at an after-school program at Marshall Elementary School, one of the six partner schools. The group was asked a series of questions such as “what exercise do you usually do at school and at home” and “what are your favorite exercise activities?” These questions were asked in order to identify current habits and potential to motivate the students to exercise, possibly by utilizing the Kroc Center. Our results indicate a preference for physical activities with a social component. Students preferred team sports such as soccer, football, and basketball as well as games involving running, such as tag. The students also identified the lack of a large, grassy field as a barrier to participation in these activities.

The key informant interviews were conducted with two physical education instructors, the community partnership liaison at Marshall Elementary School, and with one employee at a community organization dedicated to obesity prevention and education. The interviews included questions such as “what are the current exercise requirements at your school” and “what resources do you believe would be most beneficial to improving the activity levels of the students?” These questions were asked to gauge the activity levels of the students, determine the level of student activity school personnel would like to have, and identify potential barriers that exist to students meeting the Healthy Fitness Zone.

The physical education instructors stated that students at Marshall Elementary average 50 minutes of organized physical activity through physical education class each week, which is about half of what California physical education standards require. The principal barrier to more activity is a lack of time in the school day to devote to physical education. We also learned that

not all San Diego schools have P.E. instructors on staff and that it is up to the discretion of the principal to decide how to utilize teacher flex time. In some schools, science or art instruction is substituted for P.E.

As a third tool, we are surveying parents of 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> grade partner school students by asking questions such as “how much time does your child spend exercising at school” and “what are some of the factors that prevent your child from being physically active?” These questions are designed to identify whether there is a gap between reality and expectations of students' exercise at school, if children are partaking in exercise activities outside of school, and what barriers may be related to low exercise outside of school.

***Needs Assessment Conclusion:*** Each year, California schools conduct the California Physical Fitness Test on 5<sup>th</sup>, 7<sup>th</sup>, and 9<sup>th</sup> graders to see how many students score within the Healthy Fitness Zone (HFZ). Testing indicates a lower percentage of 5<sup>th</sup> grade students in the Kroc Center’s service area score within the HFZ than 5<sup>th</sup> grade students county and statewide (California Department of Education Statewide Assessment Division, 2010). Lack of exercise and physical fitness among elementary school children is tied to numerous adverse health outcomes (Haskell, Hill, and Blair, 2009). Residents in the Kroc Center’s service area currently display many of these adverse health outcomes including a high incidence of diabetes (CHIP, 2008; Mitra-Sarkar, Oswald, and Mills, 2010). Staff members at the partner schools and public health experts in San Diego identified the following barriers to increased levels of physical activity among elementary students: lack of time during the school day; lack of resources for physical education, and lack of family resources. These barriers must be addressed in designing an intervention to increase levels of physical activity and fitness among elementary school students and reduce the incidence of overweight and obesity.

## **Program Design**

*Literature Review* A review of the academic literature yields a variety of interventions that focus on increasing physical activity to reduce childhood obesity and the associated adverse health outcomes. Summaries of 22 key studies are presented in Appendix A: Literature Review Matrix, and discussed below.

*Teacher Involvement in Physical Activity* - Schools have repeatedly been identified as a site for intervention into the nation's health concerns, including the inactivity of young people (Cothran, Kulinna, & Garn, 2010, Donnelly, et al., 2009). The U.S. Department of Health and Human Services, *Healthy People 2010*, suggests a comprehensive, multi-faceted approach to increasing youth physical activity and reducing obesity with schools playing an important role in the intervention (as cited in Cothran, Kulinna, & Garn, 2010). Improved physical education is a key to increasing activity but funding, scheduling, and educational priorities can make additional physical education a hard goal to reach. Another alternative is to increase the physical education training of classroom teachers and the amount of activity in the classroom (Cothran, Kulinna, & Garn, 2010).

Obstacles including limited time during the school day, lack of teacher training, negative attitudes toward physical education, and a lack of support, are problematic in utilizing classroom time as an additional source of physical activity (Cothran, Kulinna, & Garn, 2010). Considering the long standing theory that change interventions succeed or fail based on the individual teacher, Conthran, Kulinna and Garn (2010) investigated the challenges and pressures teachers face in integrating physical activity into the classroom through a year-long study aimed at increasing physical activity and education. They found most notably that successful integration was based on a teacher's personal interest in the wellness of the whole student, not just academic



performance, and a personal interest in wellness. Perceptions of additional work, lack of time, and pressures of standardized and high-stakes testing were found to inhibit integration of physical activity into the school day.

To promote and introduce physical activity into the classroom Donnelly et al. (2009), partnered with TAKE 10! to create the “Physical Activity Across the Curriculum,” or “PAAC.” The goal of this intervention was to increase the amount of physical activity and reduce Body Mass Index (BMI) through classroom activity. PAAC integrated 90 minutes of moderate to vigorous activity into the classroom each week. Over three years, PAAC participants showed more average minutes of physical activity, a higher level of physical fitness associated with reduction of risk of some diseases, and a higher level of academic achievement. Students whose teachers modeled the PAAC physical activities were more likely to engage in the PAAC activities and benefit from the generalized outcomes (Donnelly et al., 2009).

***Minutes of Physical Activity*** - A majority of elementary school students in the United States average 100 minutes of physical education classes each week; however, the frequency and amount of moderate to vigorous physical activity (MVPA) experienced during class time is less than recommended (Simons-Morton, 1991). In order to increase the minutes of MVPA experienced by students, Simons-Morton initiated an intervention program consisting of five, six to eight week units designed to encourage “enjoyable MVPA among children during PE classes (Simons-Morton, 1991). Each unit included two or three cardiovascular activities such as dancing, running, aerobic games, jump rope, and obstacle courses. Using a tracking log, trained observers assessed students during their physical education classes, recording on a minute-by-minute basis the type and intensity of the physical activity. Results indicated a statistically significant increase in minutes of MVPA from three (3) minutes at baseline to 16 minutes at

posttest, which equates to roughly 80 additional minutes per week.

The posttest results were obtained two years after the initial intervention indicating the need for a more long-term or multi-faceted intervention to produce long-term results. Simons-Morton recommends that substantial staff training should accompany policy changes related to MVPA. Strengths of this study include intervention and control schools within the same school district and specific objective measures for physical activity.

Derri (2004) created an eight-week after school health-related fitness and nutrition education program that measured abdominal strength and endurance, trunk extensor flexibility, hamstring flexibility, cardio respiratory endurance, and body composition. For eight weeks students attended the program for one hour per day, three days per week. During the program, a variety of educational and physical activity interventions were introduced to the experimental group such as education about heart structure and function, and motor skills, walking routines, improvement of muscular endurance and strength, increased duration of physical activity, and team games and health-related fitness education. Results indicated a statistically significant interaction in the majority of measured areas, when compared to the control groups. Muscular strength and endurance, as well as cardiovascular endurance, for example, were significantly improved in the experimental group only. Body composition, however, resulted in no significant improvement over the control group. One potential explanation may be the length of the intervention (8 weeks), as well as the fact that children are often not the decision makers about what to eat at home (Derri, 2004).

Furthermore, as this study was conducted in Greece, the baselines and expected benchmarks may differ if implemented in elementary schools in the United States. However,

this study laid the groundwork to conduct future studies on the need for continued physical exercise and nutrition education programs over longer periods of time.

***Student Physical Fitness Education Curriculum*** - Research shows school-based anti-obesity programs that incorporate curriculum focused on the benefits of exercise are an effective way to motivate students to make changes in their own lives. Hollar et al. (2010) conducted a study on low-income diverse students at six elementary schools in Florida, and results indicated adding healthy lifestyle education to the intervention was key to overall success. The quasi-experimental study measured the effect of a two-year obesity prevention intervention on percentile changes in BMI and academic performance (Hollar et al., 2010). The four intervention schools and one control school included 4,588 schoolchildren, of which 48% were Hispanic; to further segment low-income students, data were also gathered for the subset of the cohort who qualified for free or reduced-price school lunches (Hollar et al., 2010). Each intervention school received an OrganWise Guys kit that integrated nutrition, physical activity and other lifestyle behavior messages to help increase awareness of the importance of healthy choices and to motivate them to make good choices throughout the day (Hollar et al., 2010).

The results showed significantly more intervention than control students stayed within normal BMI ranges both years of the study. Again, as in the Derri (2004) study, students' eating and exercise habits were not monitored or controlled outside of school, so those factors are not captured in these findings.

In another study examining healthy lifestyle curriculum as an intervention, Salmon et al. (2008) conducted a study on 10-year-old children in Australia designed to evaluate the effectiveness of a curriculum intervention to prevent excess weight gain, reduce sedentary time spent watching television and using computers, promote participation in and enjoyment of

physical activities, and improve movement skills. Salmon's group-randomized controlled trial consisted of 311 students recruited from three schools in low-socioeconomic areas. The students were separated into four groups: behavioral modification, movement skills, combined, and control (Salmon et al., 2008). The intervention components included self-monitoring and social contracts to "switch off" the TV for increasing durations and education about the health benefits of physical activity (Salmon et al., 2008). As measured by BMI and self-reporting throughout the program and at six and 12-month follow-ups, the combined group was more than 60% less likely to be overweight or obese over-time, and there was increased enjoyment of physical activity by all groups but the control (Salmon et al., 2008). Cultural differences between Australia and the United States may limit its applicability to U.S. students (Salmon et al., 2008).

***Facility Impact on Physical Activity*** - An important factor that significantly increases motivation to be physically active is access to quality facilities (Romero, 2005). A study in Australia of more than 300 elementary age students showed that socioeconomic status influences where children are physically active (Ziviani et al., 2008). Researchers found that those children from low socioeconomic backgrounds spent significantly more time playing close to home in comparison to students from middle and high socioeconomic status due to the perception of affordability of the commercial facilities. The study found students engaged in free play activities near the home, however substantial benefits were found from "enriching physical activity spaces" with opportunities for supervision and physical skill building such as following rules and working as team, like in a commercial facility (Ziviani et al. 2008).

A study of the behaviors of low and high socioeconomic populations in the United States, focusing on the concept that environmental factors, including the perceptions of safety and space for participating in physical activity found such issues may have a major influence on activity

levels (Wilson, Kirtland, Ainsworth, & Addy, 2004). Nearly 1,200 adults were surveyed for this study and a strong relationship between environmental factors and the shaping of health related behaviors was found. Those living in low socioeconomic areas were less likely to engage in the appropriate amount of physical activity than those living in high socioeconomic areas (Wilson et al., 2004). The study found that although those living in low socioeconomic areas perceive they have less access to commercial facilities for physical activities, it is not a substantial difference when compared to those in high socioeconomic areas. The authors conclude that building awareness of access to safe, quality recreational areas would contribute to increasing physical activity in low socioeconomic areas (Wilson et al., 2004).

***Parental Support for Physical Activity*** - As early as 1994 Epstein documented the importance of parental involvement in preventing childhood obesity. One hundred and fifty-eight families with children between the ages of six and 12 participated in the study. The intervention that included parents and children produced a more significant reduction in overweight and obesity outcomes than the intervention that targeted children alone.

Trost et al. (2001; 2003) conducted several cross-sectional studies examining the determinants of physical activity in obese and non-obese children. A study of 54 obese and 133 non-obese 6<sup>th</sup> grade students found that obese children exhibited lower weekly levels of physical activity (Trost et al., 2001). Obese children also reported lower levels of participation in community sports teams, physical activity among their fathers or male guardians, and physical activity self-efficacy. Physical activity self-efficacy refers to a feeling of competence and control over one's physical activities (Trost et al., 2001). In a subsequent study, Trost et al. (2003) found that parental support was significantly correlated with student physical activity. Trost (2003) concluded that interventions to promote physical activity in obese children should

aim to improve perceptions of self-efficacy, increase awareness of community resources, and increase parental support for physical activity.

Several recent studies that have involved both children and their parents have witnessed positive behavioral outcomes (Fitzgibbon et al., 2005; Engels et al.; 2005). Fitzgibbon (2005) implemented Hip-Hop to Health Jr., a randomized controlled trial for overweight prevention at 12 Head Start sites in Chicago. Hip-Hop to Health Jr. included a parental education component. The study found significantly smaller increases in BMI for the intervention group than for the control group at one and two- year follow-ups. In addition, Engel et al. (2005) implemented an after school program that engaged both children and parents at several urban high schools. The study sought to improve dietary behavior and increase physical activity through dance, games, and fitness activities. The study found improvements in dietary behavior among children and reductions in body fat percentage and BMI among adults.

***Literature Review Summary*** In summary, the peer-reviewed research shows physical activity is a key component to reaching the goal of reducing and preventing childhood obesity. Research trends show an intervention that increases physical activity in school, promotes the benefits of physical activity through an educational curriculum, gives students access to appropriate facilities for activities, and includes the students' influencers such as parents and teachers in the intervention, may lead to optimal results in terms of physical fitness and reduction and prevention of childhood obesity. Due to the limitations identified in the aforementioned studies, a more inclusive approach is warranted. For this reason the research team purposes a study integrating each of these components and conducted as a quasi-experimental study over a period of three years.

***Purpose of Study*** Research indicates a lower percentage of 5<sup>th</sup> grade students who reside in The Salvation Army Kroc Center service area score within the Healthy Fitness Zone (HFZ) on the California Physical Fitness Test than 5<sup>th</sup> grade students county- and statewide. This study will test whether elementary school students within the Kroc Center's six partner schools are more likely to score within the Healthy Fitness Zone (HFZ) on the standardized test after participating in a supplementary physical fitness program provided by the Kroc Center. This supplementary program will increase minutes of physical activity during the school day, motivate students to exercise outside of school, engage parents, and provide access to a world-class community recreation center with a wide variety of physical activity options including soccer, swimming, basketball, rock climbing, ice skating, and skate boarding.

Addressing the issue of obesity prevention through increased physical activity and education is both timely and widespread with more than one in four children in San Diego County considered obese or overweight (CHIP, 2008). Physical activity is known to reduce the occurrence of obesity and to have positive outcomes beyond the reduction of health risks associated with obesity and overweight (Janicke, Sallinen, & White Plume, 2008). Furthermore, a review of eleven studies concluded that physical activity has a positive impact on school performance, behavior, attentiveness, and attendance (Troost, 2009).

***Logic Model*** This research study's logic model is attached as Appendix B

***Program Design*** This study will occur over a three-year period, with activities commencing in the Spring of 2011 and concluding with final data analysis in the Spring of 2014. Appendix C: Project Workplan contains a detailed description of objectives, implementation activities, and the project timeline.

This study will focus on 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> grade students at two of the Kroc Center's partner schools: Marshall Elementary and Ibarra Elementary. For purposes of this study, Ibarra will be treated as the control group. As a baseline measurement of physical activity students at both schools will take the California standardized Physical Fitness Test (PFT) in the Fall of the 2011 school year. This test measures body composition and ability to complete exercises that work different core muscle groups. Throughout the year, students at Marshall Elementary will then participate in a supplementary fitness program provided by the Kroc Center. This program will include additional minutes of physical activity during the school day, in-class lessons on the benefits of physical activity, the introduction of social contracts to decrease at home screen time, and an introduction to the Kroc Center fitness facilities through field trips and family events. The in class activity that is lead by classroom teachers is referred to as desk-side physical activity (PA). Desk-side PA includes getting kids active right at their desks by doing things such as jumping jacks, lunges or squats. After completing the program, the students will be tested again at the end of the year with the same PFT.

Students at the second school, Ibarra Elementary, will be tested at the start of the year as well, but they will not participate in the supplementary Kroc Center fitness program. These students will be tested at the end of the year as well, and the research team will analyze the results to determine whether overall health and ability were affected at the school that participated in the intervention versus the school that did not.

This PFT will be administered at the beginning and end of each year with all 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> grade students. At the end of the 2014 school year, it is expected that the percentage of 5<sup>th</sup> grade intervention students with body composition outside the Healthy Fitness Zone will decrease, as measured by performance on the California PFT.



**Methods** The research team proposes to use a quasi-experimental model to test the effectiveness of a physical fitness intervention program provided to Kroc Center elementary partner schools. Our intervention site, Marshall Elementary, and our control site, Ibarra Elementary, were selected due to the similarity of the student population demographics. Participants will be recruited based on their grade level in school. All 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> grade students who are physically able at each school will participate in the study. Appendix D: Research Design Outline provides an overview of study's design.

To effectively implement the intervention, Kroc Center employees will teach 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> grade teachers a specially designed curriculum for each intervention component. Once trained, each teacher will implement aspects of the intervention program on a daily basis. Utilizing a daily desk-side PA program, teachers will provide students with an average of 20 additional physical activity minutes per week. Desk-side PA refers to organized physical activity that occurs as part of regular classroom activities. Teachers will also work with the Kroc Center to schedule and implement a monthly Kroc Fit Kids Fun Day, when a Kroc Center Project Director visits the school and spends 30 minutes with students in a fun, physical environment. Through the intervention programs, students will average 110 minutes of increased physical activity at school per month. Because 80 of these 110 minutes will occur as part of regular classroom activities and take place between subjects, there will be little impact on the current minutes spent on academic material. To further integrate physical activity into the lives of students, students receiving the intervention will also take field trips to the Kroc Center and a Free Family Fun Night will be introduced to encourage student families to participate in physical activity together.

## **Social Marketing Plan**

To engage students, parents, and teachers with the Kroc Fit Kids Initiative, the intervention program will include the following social marketing plan. Sample materials can be found in Appendix E: Social Marketing Materials.

***The Product*** The product for this project is 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> grade students being physically active for 30 to 60 minutes every day, as recommended by the U.S. Department of Health and Human Services (USDHHS) and the U.S. Department of Agriculture (USD) (USDHHS & USDA, 2005; Strong, 2005).

***The Target Markets*** The social marketing plan for this program will be segmented into three target demographics. The main target audience for this program is 3<sup>rd</sup> to 5<sup>th</sup> grade students at the intervention school, Marshall Elementary. This group will be divided into two categories due to the varying maturity and ages of the students: 3<sup>rd</sup> grade students and 4<sup>th</sup> and 5<sup>th</sup> grade students. The third group is made up of the parents of all 3<sup>rd</sup> to 5<sup>th</sup> grade students.

***The Place*** The increased physical activity program will occur at school and at the Kroc Center. At school, the program will take place in the classroom, at recess, and during physical education class. The curriculum component will also encourage the students to be active after school and to be active as a family. The social marketing materials for this program will be displayed in classrooms, on the playground, at the cafeteria, online, and in correspondence to parents. The messaging and distinctive placement of the social marketing materials will be tailored to each of our target demographics.

***The Promotion*** Third grade students are younger developmentally than 4<sup>th</sup> and 5<sup>th</sup> grade students and will be the first-year participants in the program. These factors contribute to the need for a more introductory and elementary social marketing message that focuses on the fun

and benefits of exercise, as well as what exercise actually is. The tagline for this market segment will be “How many fun ways can YOU be active today?” The imagery used on these materials will be playful and energetic, utilizing the Kroc Center mascot, RJ Kroc as a visual ambassador. Social marketing for this age group will also include an incentive program for reduced screen-time at home. The incentives will include free passes to the Kroc Center so they can begin utilizing the facility early, potentially leading to more success in their fitness test scores by 5<sup>th</sup> grade.

Fourth and 5<sup>th</sup> grade students are in the “upper grades” and at the close of the study will have already participated in the program for one or two years. For these reasons, the messaging for this age group will focus on engaging the students’ interest throughout the course of the study and encouraging good habits outside of school. Materials will employ more mature graphic elements. The tagline for this segment will be “What are you doing after school?” This message was developed based on focus groups with this age range that showed students are inactive after school because they have the option to play video games and watch TV. Moreover, parent surveys revealed many students who live in apartments don’t have appropriate places to play after school. Showing these children images of fun activities they can participate in at the Kroc Center after school may help bridge these gaps and encourage conversations between the students and their parents about utilizing the facility outside of school.

A web page will also be developed for this age group, as 52% of nine to twelve year olds use the internet at home at least once per week (Corporation for Public Broadcasting [CPB], 2002). Internet usage is also widespread at schools—over 76% of K-12 teachers reported using digital media in the classroom (Grunwald Associates, 2010). This web page will be listed under “favorites” on all school computers for easy access, and it will include fitness education games, a

social component for kids to talk to other kids about being active, an option for creating a physical activity journal, and family activities they can print out and complete for prizes. Focus groups with this age group indicated “Silly Bandz” plastic bracelets are highly popular among students right now and would serve as a good incentive for physical activity. These bracelets could be awarded for family activity and based on the number of worksheets completed.

A third market segment will include the student’s parents. Flyers will be sent home to parents about the benefits of the program and how parents can get involved in their child’s health and fitness at home. The social marketing message to parents will be “Getting fit can be family fun”. In the flyers, parents will also be encouraged to log on to the website with their children and complete the activities together. Parents will be given information about the active programs at the Kroc Center that they can utilize during after school hours emphasizing the inexpensive cost of using the center. Coupons for free and discounted family packages and tickets will be included in select flyers.

***The Costs*** There are several costs to students and parents associated with asking 3<sup>rd</sup> to 5<sup>th</sup> grade students to be active for 30 to 60 minutes every day. First, students will be asked to give up sedentary activities like playing video games and watching television during their free time at home. For parents, there is the sacrifice of time for their children to contribute to the household, and there’s the added responsibility of encouraging their children to be active. Parents are also asked to spend time not only taking children to participate in activities at the Kroc Center but also to take time to be active with them while at the Center. This marketing plan addresses these costs by presenting physical activity as a fun family activity and eliminating the monetary expenses of utilizing the Kroc Center.

## **Cultural Competency Plan**

*Experience with population* The target population for this research is diverse in terms of ethnic background, culture, and religion. Students at Marshall Elementary, the intervention school, speak 17 different languages. It is important that all intervention activities and personnel be culturally competent for the successful implementation of the program.

The Salvation Army Kroc Center has experience and a track record of success serving the target population through on-site programming and outreach to its partner elementary schools. For 8 years the Kroc Center has served the communities in which the target population resides and attends school. Each day the Kroc Center serves approximately 3,000 individuals from the community. More specifically, the Kroc Center has a Free Family Arts and Literacy program that serves four of the six Kroc Center partner schools. This arts program mirrors the physical fitness intervention in many ways, including having a Program Director provide supplemental education and activities directly to students in their schools.

While the Kroc Center's staff has experience working with its diverse target population, the Center's Board of Directors is more limited in its cultural diversity. The Center's Board is committed to attracting membership that is more reflective of the community in which it works. During the study period, the Kroc Center will form a community advisory committee to ensure participation of parents, teachers, and community leaders. This committee is discussed in detail in a following section.

The Kroc Center is known for its quality programs and for reaching out to families through such programs and special events year-round. From adult literacy programs and children's day camps, to annual events such as the Boo Bash, Kroc Center staff members are

experienced in promoting activities and providing on-site customer service and engagement opportunities to the target population.

***Training and Staffing*** Beyond the general knowledge of the Kroc Center staff and administration in serving the target population, it is imperative the Project Director is carefully hired and trained. The Project Director should have prior experience in mid-city San Diego, or another area of low-income and diverse communities. Ideally, this person will have teaching and physical education experience and embrace a healthy and energetic lifestyle.

The Project Director will work closely with the Kroc Center's Education Manager, who coordinates the Center's arts education programs in the partner schools. The Education Manager will facilitate contact with school administrators, classroom teachers, and parent liaisons. Throughout the three-year study the classroom teachers will play an important role in providing education and desk-side physical activity. The Project Director will train the teachers on how to integrate physical activity into classroom activities.

***Community Representation*** To assure the intervention program engages and respects the community values and diversity an advisory committee will be formed. The community-based advisory committee will have six members consisting of two parents, a teacher, a school administrator, the Project Director, and a physical education professional. This committee will oversee and review curriculum and the development of promotional material, and be cognizant of the work plan timeline.

This committee should be formed immediately after the Project Director is hired. Two to three times each year students should be invited to join the committee in order to obtain feedback and gain insight as to how the intervention program is functioning from the participants' point of view.

***Language*** As stated previously, the target population has a wide variety of languages spoken in school and at home. It is impractical to try to provide intervention components in the native languages of all participants. However, with 54.2% of the student population of Marshall being Latino, it is important the program is produced in both English and Spanish. Instructors, group leaders, and the Project Director will be bilingual in English and Spanish. As a significant percentage of the student body of Marshall Elementary are Somali, it will be important to engage parents and students that can act as translators for the program.

***Materials*** Bicultural and bilingual materials will be produced in both English and Spanish. The materials will be produced in conjunction with student artists and the advisory committee, in an effort to reflect the target population. Each spring, students will also be encouraged to enter a contest to create materials that will engage their peers in physical activity at school and at home in coming year. The advisory committee and the Project Director will review submissions and decide on a winner.

All materials designed for this program, including the posters, website, and educational collateral, will utilize culturally appropriate images and activities that will be of interest to the students and families without disregarding cultural values. For example, Somali girls often wear hijabs, so it is important to show some activities that do not require them to remove the religious garment to participate.

**Evaluation Plan**

The collection and analysis of data will provide insight into the intervention program's impact on overall fitness of students in the experimental school. This in turn will provide a useful platform for future program development and implementation at not only The Salvation Army Kroc Center of San Diego but Kroc Centers nationwide.

***Evaluation Design***

There are five objectives for the project; the first four are targeted to each intervention component, and the fifth encompasses the entire program, measuring the overall effect on the intervention students. The first objective is to have, by Spring 2012, 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> grade students increase their physical activity by at least five minutes each day through desk-side PA. This increase in daily activity will be measured by self-reporting through teacher logbooks, as well as classroom questionnaires filled out by the students themselves.

The second objective is by the start of the Spring, 2012 semester, the intervention school's 3<sup>rd</sup> to 5<sup>th</sup> grades will have biannual field trips to the Kroc Center, and free family events with specialized programs encouraging physical activity and giving students access to high quality physical activity facilities. The utilization of the Kroc Center will be measured by documentation for the scheduled school field trips, as well as sign-in logs for the Free Family Fun Nights. To meet the third objective, 3<sup>rd</sup> to 5<sup>th</sup> grade students will increase the number of minutes engaged in physical activity per week after participating in the Kroc Fit Kids intervention. This increase in physical activity will be measured through standardized self-report forms associated with the ACTIVITYGRAM program.

Then as the fourth objective, by the end of the 2013 school year, parents will increase involvement in their children's physical activity by encouraging activity, providing access to



physical activity facilities, and engaging in the family fitness curriculum and Family Fun Night events. Parental activity will be measured by physical activity worksheets and attendance records at Family Fun Nights.

These four evaluation components work together towards the overall goal of the intervention program: to reduce childhood obesity among 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> grade students in the Kroc Center's six partner schools. The fifth objective encompasses the impact of each of the previous objectives as well as the overall intervention program goal: by the end of the 2014 school year, the percentage of 5<sup>th</sup> grade intervention students with BMI outside the healthy fitness zone will decrease, as measured by performance on the California PFT.

The intervention program will be evaluated based on outcomes of the fifth objective and the fitness levels of students as measured by the California PFT as the measurement tool. This tool will measure the percentage of students with body composition scores outside the Healthy Fitness Zone on the PFT, as well as changes in scores on aerobic capacity, abdominal strength, trunk extensor strength, upper body strength, and flexibility outside the healthy fitness zone.

### ***Process and Outcome Evaluation Measures***

***Demographics*** The demographics of students in both the control and experimental groups must be tracked in order to determine trends and program effectiveness among all students. Schools in California are required to track demographic data on race/ethnicity, socioeconomic status, English proficiency; and disability status (California Department of Education, n.d.). The research project will obtain parental consent to collect these data from the school. The data's validity has not been formally tested, but is widely used and relied upon as a sound measurement of demographic information.

**Behavior** Changes in physical activity behavior and physical fitness will be measured with FITNESSGRAM and ACTIVITYGRAM, proprietary physical fitness and physical activity assessments (Corbin & Pangrazi, 2008). The California Board of Education has adopted FITNESSGRAM as the statewide PFT that is administered to all 5<sup>th</sup>, 7<sup>th</sup>, and 9<sup>th</sup> grade students (California Department of Education, n.d.).

FITNESSGRAM assesses cardiovascular fitness, body composition, muscle strength, muscular endurance, and flexibility (Corbin & Pangrazi, 2008). FITNESSGRAM is a set of criterion-referenced assessments with scores falling inside or outside a “Healthy Fitness Zone” (HFZ). Scores within the HFZ are associated with positive health outcomes (Corbin and Pangrazi, 2008). Testing has determined FITNESSGRAM to be valid and reliable among children in 5<sup>th</sup> grade and above (Corbin & Pangrazi, 2008; Cureton & Plowman, 2008; Going, Lohman, & Falls, 2008; Plowman, 2008). The test can be used with children in lower grades, but researchers recommend providing extra support when conducting the assessments and communicating results (Corbin & Pangrazi, 2008).

The current research project is particularly interested in the body composition assessment, as high body fat content has been linked to risk factors for adverse health outcomes such as cardiovascular disease and Type II diabetes (Going, Lohman, & Falls, 2008). Body composition involves factors that contribute to body weight such as muscle, bone, and fat content. Body fat in excess of 25% for boys and 32% for girls is outside the Healthy Fitness Zone (Going, Lohman, & Falls, 2008). FITNESSGRAM recommends measuring body composition with the skinfolds technique because it has been found to be a more valid measure than the Body Mass Index (BMI) technique (Going, Lohman, & Falls, 2008).

ACTIVITYGRAM, an assessment of physical activity, is a supplement to FITNESSGRAM (Welk, G.J., & Morrow, J.R., 2008). The ACTIVITYGRAM assessment is based on the Previous Day Physical Activity Recall (PDPAR), a self-report instrument (Welk, G.J., & Morrow, J.R., 2008). The PDPAR has been validated for both elementary aged children and adolescents, but the correlations were stronger for adolescents than for elementary aged children. Although the test is still used with elementary aged children, this limitation must be considered when analyzing results (Welk, G.J., & Morrow, J.R., 2008).

***Evaluation Methods*** Marshall Elementary employs 1.5 Physical Education instructors. Once each year, these instructors administer the California PFT and collect the results. For the research study, these instructors will work with the Kroc Center Project Director to collect demographic data and administer both the Pre and Post PFT tests. Physical education staff members and the Project Director will also conduct the test and collect data at the control school, Ibarra Elementary.

***Database*** Due to the sample size and quantity of testing categories, we will be using the Statistical Package for the Social Sciences (SPSS) for the analysis of the datasets. SPSS offers extensive data analysis options that far exceed the capabilities of more rudimentary software. Data entry will be performed by trained graduate school interns working for the Kroc Center. The analysis of the dataset will be performed each year by research professionals to be determined by the Kroc Center. The chosen research professionals will likely be from a university setting, and must include SPSS software in their analysis fees.

The data will be assessed on the basis of the PFT measurement categories. Additionally, information will be collected and examined on a comparative analysis of each grade, each class

as it progresses in grade level, and a side -by-side analysis with the intervention and control schools.

During the 5<sup>th</sup> grade PFT conducted by the state, the Project Director and project team will be on site to collect data that will be analyzed by the project's independent research professionals. This data will be entered into SPSS and analyzed in the same manner as all the pre- and post-tests over the three years. This will allow the research data to be examined in the same manner that other test information is, and will not require the 5<sup>th</sup> grade students to test multiple times during the spring timeframe.

### **Closing Statement**

The strengths of this study include the demographic similarity of the intervention and control schools, the breadth of the study's intervention activities, and the use of a standardized and familiar evaluation tool, leading to easier program replication. Moreover, the use of existing school staff and community resources make the study practical and immediately useful to the benefit of the students, schools, and community. The findings of this study have the potential to make a profound impact on the lives of children, and future adults across the nation due to the national organization of the Kroc Center.

Limitations of the study are the low number of schools involved, the unique demographic and socioeconomic profiles of the schools and surrounding community, potential for attrition of students, and confounders based on the close proximity of the intervention and control schools, as well as the longevity and scope of intervention activities. An additional limitation of this study is that although nutrition is a key determinant to childhood obesity, it was not feasible to include in this intervention. We suggest future studies focus on a larger sample size and examine the potential long-term impacts of an increased interest and participation in physical activity.

# Childhood Obesity Intervention Budget

## The Salvation Army Kroc Center Kroc Fit Kids Program

<b>Personnel Costs</b>	<b>YEAR 1</b>	<b>YEAR 2</b>	<b>YEAR 3</b>
Program Director 1.0 FTE	50,000.00	51,500.00	53,045.00
Kroc Athletics Manager .10 FTE	5,000.00	5,150.00	5,304.50
Kroc Volunteer Coordinator .10 FTE	4,000.00	4,120.00	4,243.60
<i>Personnel Cost</i>	59,000.00	60,770.00	62,593.10
Fringe Expense @ 28%	16,520.00	17,015.60	17,526.07
<i>Total Personnel Costs</i>	75,520.00	77,785.60	80,119.17
<b>Operating Costs</b>			
Supplies	250.00	250.00	250.00
Mileage	2,250.00	2,250.00	2,500.00
Printing	2,500.00	2,500.00	2,500.00
Duplicating	1,000.00	1,000.00	1,000.00
Postage	77.00	77.00	110.00
<i>Total Operating Costs</i>	6,077.00	6,077.00	6,360.00
<b>Other Expenses</b>			
Educational Materials/Equipment	3,500.00	2,000.00	2,000.00
Transportation Subsidy to School	2,000.00	2,000.00	2,000.00
Promotional Items	1,000.00	1,000.00	1,000.00
Incentives	3,000.00	3,000.00	3,000.00
Food	1,000.00	1,000.00	1,000.00
Evaluation Consultant	1,250.00	1,250.00	5,000.00
Media/Advertising	1,200.00	800.00	800.00
<i>Total Other Expenses</i>	12,950.00	11,050.00	14,800.00
<i>Total Direct Expenses</i>	19,027.00	17,127.00	21,160.00
<i>Total Indirect Expenses @ 20%</i>	15,104.00	15,557.12	16,023.83
<b>Total Expenses</b>	<b>109,651.00</b>	<b>110,469.72</b>	<b>117,303.00</b>

## **Budget Justification**

### **Personnel Expenses**

- The Project Director will be hired in the Spring of 2011 as a full-time exempt employee with an annual base salary of \$50,000. The costs incurred of having the Project Director on staff prior to the start of the school year are going to be paid for out of the Kroc Center Athletics budget.
- The Athletics Manager will assist with the development of the desk-side PA, school assembly programs, school field trips, and Free Family Fun Nights. Ten percent of this Kroc Center employee's salary has been allocated for this program.
- The Kroc Center Volunteer Coordinator will help to arrange and train volunteers for the school field trips and Free Family Fun Nights. Additionally, this coordinator will arrange for training and scheduling volunteers to assist in student fitness assessments and data entry. Ten percent of this employee's salary has been allocated for this program.
- Salary increases are based on 3% cost of living increases each year.

### **Fringe Expenses**

- The Kroc Center's fringe benefit expense rate is 28% for Full-Time Exempt employees, and 17% for Part-Time Hourly employees.

### **Operating Expenses**

#### **Supplies**

- \$250 will be used to purchase basic office supplies for the Project Director including paper, pens, and a white board for trainings.

#### **Mileage**

- Mileage is calculated based on the Kroc Center's standard \$0.50 per mile rate and reflects 45 trips to Marshall Elementary School and 10 to Ibarra Elementary School during each year of the intervention.

#### **Printing**

- Printing costs include twenty-four 22"x28" posters that will be printed in-house at the Kroc Center and print costs for 285 fliers distributed to parents each month for the nine-month school year.

#### **Duplication**

- The Project Director will copy two letters per school year to 285 parents, multiple worksheets for students throughout the program, and one set of 285 social contracts. This will increase to two sets of social contracts the following years.

#### **Postage**

- Postage costs reflects mailing 700 letters (two different letters - one at the beginning of program and another at the end of the year for the first two year), to the parents at non-profit bulk postage rate of \$0.11. The third year will include a mailing of project findings.

**Other Expenses****Educational Materials**

- The Project Director will put together an Assembly Pack with materials and equipment such as balls, jump ropes, resistance bands, etc. as the Director needs to engage students in activities each month. This line item also includes instructional manuals for teachers, teacher journals, and in class worksheets for students (4,500 pieces, 12 different designs).

**Transportation Subsidy to School**

- This cost is based on two field trips to the Kroc center each year for 3rd, 4th, and 5th grade students at the intervention school. This cost assumes the Kroc Center will assist with the cost of bussing the students to the Center at a set rate over the course of the project.

**Promotional Items**

- Promotional t-shirts for volunteers and program staff (12 each year to correspond to branding of the program).

**Incentives**

- Incentives include the distribution of four-hundred \$5 Day Passes to the Kroc Center for the first four Free Family Fun Nights as incentives for families to attend during the start up phase. There will also be incentives offered to students for social contract signing and implementation such as Silly Bandz (this will likely change year to year based on student preferences).

**Food and Beverage**

- Healthy snacks will be provided at the Free Family Fun Nights

**Evaluation Consultation**

- This cost is based on hiring a consultant for ten hours in year one to provide insight for evaluation processes and confirm data entry process is correct. Data entry will be performed by volunteers and overseen by the Project Director. Each year the evaluation consultant will check on the data entry and perform low-level analysis. The last year of the intervention is when the full report will be provided.

**Media/Advertising**

- There will be a cost associated with the creation of the student interactive website. After the site is designed it will be managed by the Kroc Center staff at an internal rate of \$20 per hour for 40 hours each year.

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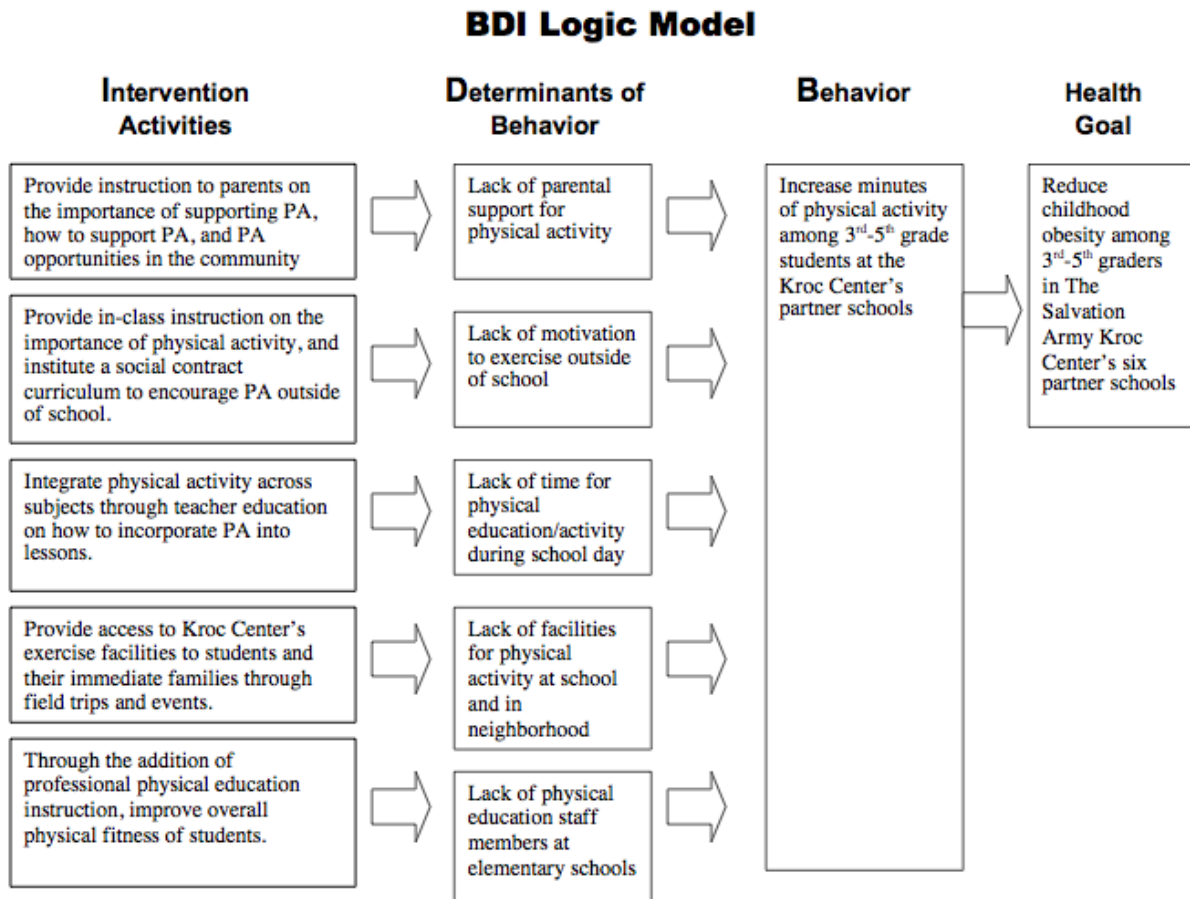
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## APPENDIX A

See Attached PDF

**APPENDIX B: BDI Logic Model**





**APPENDIX C: Workplan**

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**Workplan**

**Program Goal:** To reduce childhood obesity among 3<sup>rd</sup> to 5<sup>th</sup> graders in The Salvation Army Kroc Center’s six partner schools.

<b>Objective 1:</b>	<b>Implementation Activities:</b>	<b>Timeline:</b>	<b>Person Responsible:</b>	<b>Process or Outcome Measures</b>
<p>By Spring semester 2012, 262 3<sup>rd</sup>-5<sup>th</sup> grade students will increase physical activity by at least 5 minutes each day through desk-side activities, as measured by teacher log sheets.</p>	<ol style="list-style-type: none"> <li>1. Project Director will create basic desk-side PA and PA program for teachers.</li> <li>2. Project Director will provide instruction and customization to teachers using desk-side PA and PA education to maximize ease of implementation and impact on students.</li> <li>3. Project Director will do site visits and provide four practice sessions each year.</li> </ol>	<ol style="list-style-type: none"> <li>1. Spring 2011 - PA program for integrating PA into the classroom created and reviewed by school administration.</li> <li>2. 2011 Summer/prior to first day – Project Director will meet with intervention school teachers to provide instruction in PA program.</li> <li>3. Fall 2011 – Project director does site check-ins with teachers in experiment schools (done four times throughout the school year).</li> </ol>	<ul style="list-style-type: none"> <li>● Project Director will identify and develop PA program.</li> <li>● Intervention school and an expert in childhood physical education will review the program.</li> <li>● 3<sup>rd</sup> -5<sup>th</sup> grade classroom teachers will implement the program and keep journals.</li> <li>● School administrators will monitor and enforce program implementation.</li> <li>● Project director will conduct site visits to motivate teachers, make needed changes to the program, and collect self-reporting journals and questionnaires from teachers and students.</li> </ul>	<p>Outcome measures:</p> <ul style="list-style-type: none"> <li>• Increase physical activity by 5 minutes each day</li> </ul> <p>Measurement Tool:</p> <ul style="list-style-type: none"> <li>• Teacher log sheet</li> </ul>

Brandon Dotts, Jason Jarvinen, Maria Todaro, and Morgan Wilson

**Workplan**

**Program Goal:** To reduce childhood obesity among 3<sup>rd</sup> to 5<sup>th</sup> graders in The Salvation Army Kroc Center’s six partner schools.

Objective 2:	Implementation Activities:	Timeline:	Person Responsible:	Process or Outcome Measures
<p>By the start of the Spring 2012 semester, the intervention school’s 262 3<sup>rd</sup> - 5<sup>th</sup> grade students will have a monthly field trip to the Kroc Center, and free family events with specialized programs encouraging PA and giving students access to high quality PA facilities, as evidenced by attendance records at the Kroc Center.</p>	<ol style="list-style-type: none"> <li>1. Create 12-month program curricula for PA at the Kroc Center with input and review from school administration, parents, students, and PE instructors.</li> <li>2. Develop schedule and logistics for having students visit the Kroc Center.</li> <li>3. Distribute materials and permission slips to student families regarding the Kroc Center intervention program and PA.</li> <li>4. Students will visit the Kroc Center for program.</li> <li>5. Send promotions to student families for family free nights to encourage participation.</li> </ol>	<ol style="list-style-type: none"> <li>1. Spring 2011 – the Kroc Center PA program curriculum is created and reviewed by school administration.</li> <li>2. Summer 2011/prior to first day – the Kroc Center and school administrators confirm schedule of visits to the Kroc Center.</li> <li>3. Fall 2011 - Materials are distributed to parents for permission for students to visit the Kroc Center, PA program goals, and encouraging family involvement.</li> <li>4. Fall 2011 - Students start making monthly visits to the Kroc Center.</li> <li>5. Fall/Winter 2011 - Each month Project Director sends a letter to students’ homes regarding the Kroc Center intervention program, what students are participating in and the PA impact.</li> <li>6. Dec. 2011 - first free family night takes place.</li> <li>7. Spring 2012 - four free family nights are offered.</li> <li>8. Fall 2012 –monthly free family nights are offered for the school year.</li> </ol>	<ul style="list-style-type: none"> <li>● The Project Director is responsible for creating a program curriculum for 12 student programs and family programs each year.</li> <li>● Project Director and school administration will confirm the schedule of visits to the Kroc Center and logistics of cost, supervision, and transportation.</li> <li>● Project Director will provide materials to be distributed to families to promote program and participation.</li> <li>● School will be responsible for distribution of materials and attaining permissions for students to visit the Kroc Center.</li> <li>● Project Director and Kroc Center staff are responsible for implementing all Kroc Center programs/visits and for providing a safe and engaging atmosphere.</li> </ul>	<p>Outcome measures</p> <ul style="list-style-type: none"> <li>• Utilization of the Kroc Center facilities</li> </ul> <p>Measurement Tool:</p> <ul style="list-style-type: none"> <li>• Scheduled school field trips</li> <li>• Sign-in logs for Free Family Fun Nights</li> </ul>

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<b>Objective 3</b>	<b>Implementation Activities:</b>	<b>Timeline:</b>	<b>Person Responsible:</b>	<b>Process or Outcome Measures</b>
<p>By Spring semester 2013, 262 3<sup>rd</sup>-5<sup>th</sup> grade students will increase the number of minutes engaged in physical activity per week after participating in the Kroc Fit Kids Intervention, as documented by ACTIVITYGRAM self-reports.</p>	<ol style="list-style-type: none"> <li>1. Project Director identifies and creates curriculum.</li> <li>2. Project Director researches effective exercise curriculum interventions for elementary school students.</li> <li>3. Project Director meets with key Kroc Center staff and partner school leadership to discuss and confirm curriculum.</li> <li>4. Project Director develops a research based curriculum with the following components:                             <ol style="list-style-type: none"> <li>a. Health education- teach students about the benefits of exercise and implications of a sedentary lifestyle.</li> <li>b. Fun ways to get fit- talk about exciting ways to be active both at school, outside of school, and fun options at the Kroc Center.</li> <li>c. Social contracts-Develop a contract limiting their screen-time at home and promising to engage in an activity of interest.</li> </ol> </li> <li>5. Curriculum is amended as needed throughout the year</li> <li>6. Final curriculum and program plan is adopted and branded by the Kroc Center.</li> </ol>	<ol style="list-style-type: none"> <li>1. January 1, 2011—Project Director identified</li> <li>2. January 2 -January 31—Project Director researches curriculum interventions.</li> <li>3. January 2-January 31—Project director coordinates with the Kroc Center and intervention school staff.</li> <li>4. February 1-May 1 2011 — Project Director develops curriculum</li> <li>5. May 1, 2011—The Kroc Center executive staff, intervention school administrators, and a child physical fitness expert review and suggest changes to curriculum.</li> <li>6. May 1-May 31, 2011—Project Director integrates suggested revisions to curriculum</li> <li>7. June 1-July 31— The Kroc Center and school administrators approve final curriculum.</li> </ol>	<ul style="list-style-type: none"> <li>• Kroc Center Executive Staff Members identify Project Director</li> <li>• Project Director is responsible for implementation activities</li> </ul>	<p>Outcome measures:</p> <ul style="list-style-type: none"> <li>• Increased minutes engaged in daily PA</li> </ul> <p>Measurement Tool:</p> <ul style="list-style-type: none"> <li>• ACTIVITYGRAM self-reports by students</li> </ul>

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**Program Goal:** To reduce childhood obesity among 3<sup>rd</sup> to 5<sup>th</sup> graders in The Salvation Army Kroc Center's six partner schools.

<b>Objective 4</b>	<b>Implementation Activities:</b>	<b>Timeline:</b>	<b>Person Responsible:</b>	<b>Process or Outcome Measures</b>
By the end of the 2013 school year, at least 262 parents will increase involvement in their children's physical activity by: encouraging activity, providing access to physical activity facilities, and engaging in the family fitness curriculum and family event nights; as documented by physical activity worksheets and attendance records at Kroc Family Fitness Nights.	<ol style="list-style-type: none"> <li>1. Project Director develops learning objectives for parent curriculum.</li> <li>2. Curriculum developed to meet objectives.</li> <li>3. Activities developed for students to take home and complete with parents.</li> <li>4. Program is submitted to the Kroc Center and school administrators.</li> <li>5. Program is implemented.</li> <li>6. Program is monitored and evaluated.</li> </ol>	<ol style="list-style-type: none"> <li>1. Spring 2011 Project Director develops learning objectives, curriculum prototype, and activities.</li> <li>2. Summer 2011 Prototype curriculum and activities are tested and modified.</li> <li>3. Fall 2011 curriculum is implemented.</li> </ol>	<ul style="list-style-type: none"> <li>• Project director develops curriculum.</li> <li>• Project Director will implement the curriculum.</li> </ul>	Outcome measure: <ul style="list-style-type: none"> <li>• Parents will increase involvement in their children's physical activity by: encouraging activity, providing access to physical activity facilities, and engaging in the family fitness curriculum and family event nights</li> </ul> Evaluation Tool: <ul style="list-style-type: none"> <li>• Physical activity worksheets</li> <li>• Attendance records at Kroc Family Fitness Nights</li> </ul>

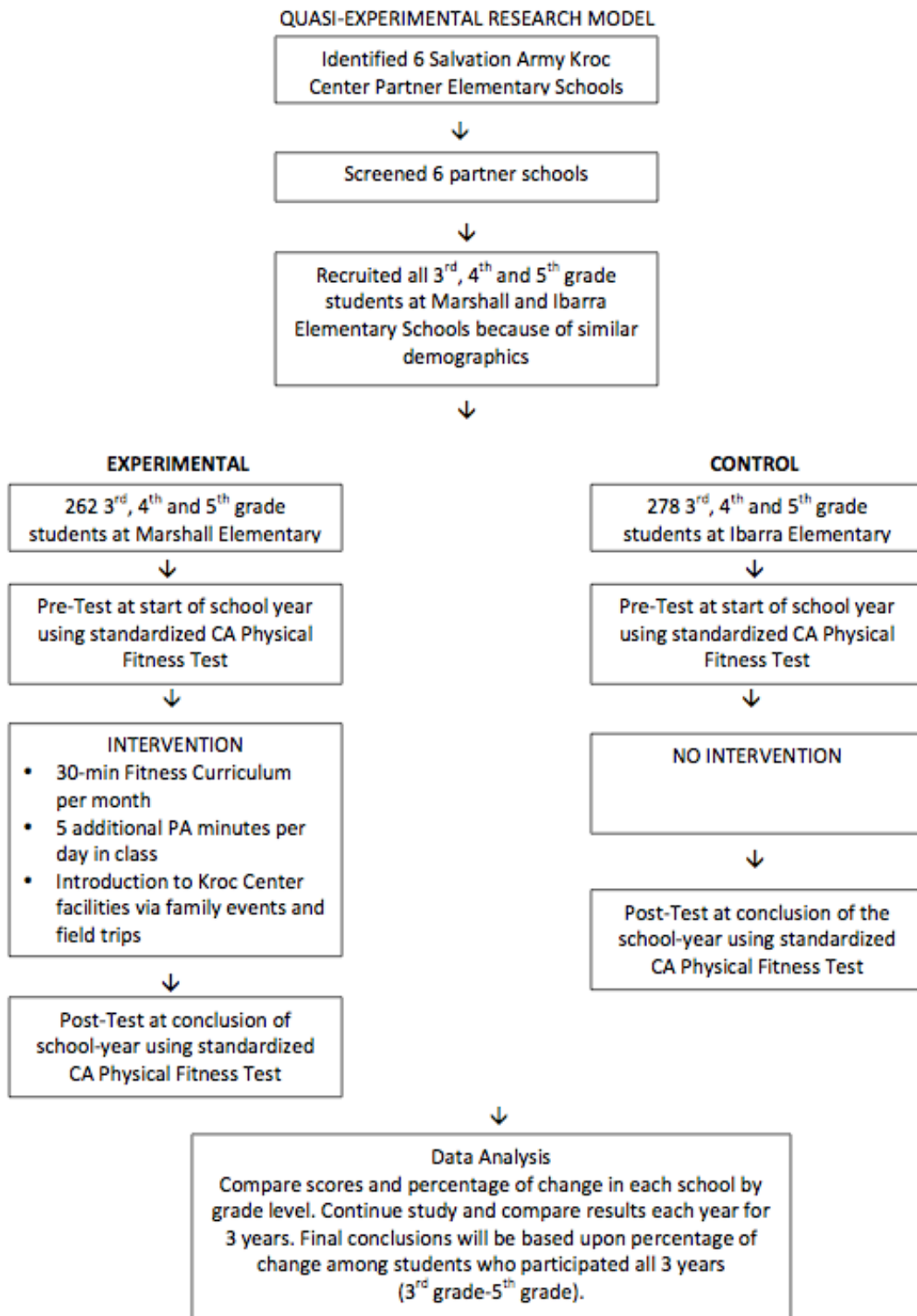
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**Program Goal:** To reduce childhood obesity among 3<sup>rd</sup> to 5<sup>th</sup> graders in The Salvation Army Kroc Center’s six partner schools.

<b>Objective 5</b>	<b>Implementation Activities:</b>	<b>Timeline:</b>	<b>Person Responsible:</b>	<b>Process or Outcome Measures</b>
<p>By the end of the 2013 school year, the percentage of 5<sup>th</sup> grade students who fall within the Healthy Fitness Zone on the California Physical Fitness Test (PFT) will increase over baseline, as measured by PFT test results.</p>	<ol style="list-style-type: none"> <li>1. Take baseline measurements of BMI of 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> grade students participating in the intervention and the control as part of the Ca PFT.</li> <li>2. Take follow-up measurements of BMI as part of the Ca PFT for intervention and control groups.</li> </ol>	<ol style="list-style-type: none"> <li>1. September 2011—take baseline measurements of student performance on Ca PFT including BMI.</li> <li>2. March 2012 take follow-up performance on Ca PFT.</li> <li>3. Continue to take follow-up measures of Ca PFT performance in September and March of each year.</li> <li>4. May 2013—take final measurements of performance on Ca PFT which will record those students who have been in the program all 3 years.</li> </ol>	<ul style="list-style-type: none"> <li>• Physical education instructors at elementary schools will conduct Ca PFT and collect results.</li> <li>• Project research assistants will collect results from PE instructors.</li> </ul>	<p>Primary outcome measure</p> <ul style="list-style-type: none"> <li>• Increase in % of 5<sup>th</sup> grade students with body composition within the Healthy Fitness Zone.</li> </ul> <p>Secondary outcome measures:</p> <ul style="list-style-type: none"> <li>• Increase in % of 5<sup>th</sup> grade students with aerobic capacity, abdominal strength, trunk extensor strength, upper body strength, and flexibility within the Healthy Fitness Zone.</li> </ul> <p>Evaluation Tool:</p> <ul style="list-style-type: none"> <li>• PFT Test Results</li> </ul>

**APPENDIX D: Research Model**



**APPENDIX E: Social Marketing Materials**

# How Many Fun Ways Can YOU be Active Today?



DID YOU KNOW...  
**Swimming,**  
**Playing Soccer** with your  
friends and **Running around**  
During Recess are all activities that  
can make you healthier?

# HOW MANY FUN WAYS CAN YOU BE ACTIVE TODAY?



abcde

**DID YOU KNOW...**  
**Swimming,**  
**Playing Soccer** with  
your friends and  
**Running around**  
during recess are all  
activities that can make  
you healthier?

**KROC FIT KIDS**







**WHAT ARE YOU  
DOING  
AFTER SCHOOL?**





Literature Review Summary Matrix - The Kroc Center

Name of Journal, name of article, authors, date published (APA format)	Target population	Intervention/Program	Measures	Results/findings	Study Limitations	Recommendations for further exploration
Cothran, D., Kulinna, P., & Garn, A. (2010). Classroom teachers and physical activity integration. <i>Teaching &amp; Teacher Education, 26</i> (7), 1381-1388. doi:10.1016/j.tate.2010.04.003	Project examined 23 teachers' involvement in a curricular project to integrate physical activity into the school day. The teachers represented all grade levels and worked in schools that served Native American students in the United States.	Teachers' willingness to engage was influenced positively by caring about students and their own personal wellness history. Their engagement was impeded by institutional factors of scheduling and assessment pressures. The results provide insights into how teachers might be persuaded to and prepared for the implementation of similar programs in new locations.	Interviews occurred twice during the year-long project. Data were analyzed via constant comparison.			full article saved in dropbox
Donnelly, J., Greene, J., Gibson, C., Smith, B., Washburn, R., Sullivan, D., et al. (2009). Physical activity across the curriculum (PAAC): A randomized controlled trial to promote physical activity and diminish overweight and obesity in elementary school children. <i>Preventive Medicine, 49</i> (4), 336-341. doi:10.1016/j.ypmed.2009.07.022.	1527 children in grades 2 and 3 in 24 elementary schools in Northeast Kansas. Participants were 48.8% male and 51.7% female, 77.4% caucasian, 6.2% African American, 10.1% Hispanic, 1.6% Native American, 1.2% Asian, and 3.6% multi-ethnic. 43% qualified for free or reduced lunch.	Three-year cluster randomized controlled trial. Intervention groups received Physical Activity Across the Curriculum (PAAC). PAAC promoted 90 min/wk of moderate to vigorous physically active academic lessons delivered by classroom teachers.	Primary measure was reduction in gains in BMI for PAAC compared to control schools. Secondary outcomes were changes in metabolic fitness, aerobic capacity, skinfolds, circumferences, daily PA, diet intake, and academic achievement in children who received PAAC compared to control.	No significant difference in change in BMI between PAAC schools and control schools after 3 years. But, among the PAAC schools, those with $\geq 75$ min of Physical Activity Across the Curriculum (PAAC) per week showed significantly less increase in BMI at 3 years compared to schools that had $< 75$ min of PAAC. PAAC had significantly greater changes in daily physical activity and academic achievement scores. No difference between PAAC schools and control schools for the other secondary measures.	The study was limited in that it did not explicitly control for the socioeconomic status of students in the intervention schools versus the control schools. The study was randomized, but with only 24 schools participating this potential bias ought to be addressed.	Future studies out to test the PAAC hypothesis while controlling for socioeconomic status of the partnering schools. Future studies ought to also replicate this design for schools serving predominantly minority populations. Future studies also ought to examine what impact the intensity of classroom physical activity has on changes in BMI and academic performance.
Dunton, G., Lagloire, R., & Robertson, T. (2009). Using the RE-AIM Framework to evaluate the statewide dissemination of a school-based physical activity and nutrition curriculum: "Exercise Your Options". <i>American Journal of Health Promotion, 23</i> (4), 229-232. Retrieved from Academic Search Premier database.	Middle School Students across California	An eight-lesson nutrition and physical activity curriculum, including a teacher guide, video clips, a student activity booklet, and ancillary materials were provided to teachers.	Program records, classroom observations, teacher surveys, and student presurveys and postsurveys assessing physical activity, sedentary behaviors, and dietary intake.	During the program, total physical activity increased, watching TV and playing games/computer use decreased.	Limited to CA; only 42% of teachers ordered program; 51% of them fully completed it.	Incorporate a physical activity intervention with the educational curriculum; evaluate the change in students when compared to a curriculum-only intervention.
Epstein, L.H., Valoski, A., Wing, R.R., McCurley, J. (1994). Ten-year outcomes of behavioral family-based treatment for childhood obesity. <i>Health Psychology, 13</i> 373-383.	158 families participated. Children between 6 and 12, 20% - 100% overweight	Weekly treatment meetings for 8-12 weeks, with monthly meetings continuing for 6-12 months from start of program. Meetings focused on the importance of PA. Traffic Light Diet was introduced to reduce caloric intake and improve nutrients.	Height and weight; BMI; Survey that measures degree of support by family members, friends, and persons with whom students have lived over the past year.	The intervention that included both parents and children produced a more significant reduction in overweight and obesity outcomes than the intervention that targeted children alone.		

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Hollar, D., Messiah, S., Lopez-Mitnik, G., Hollar, T., Almon, M., & Agatston, A. (2010). Effect of a Two-Year Obesity Prevention Intervention on Percentile Changes in Body Mass Index and Academic Performance in Low-Income Elementary School Children. <i>American Journal of Public Health, 100</i> (4), 646-653. Retrieved from Academic Search Premier database.	6 elementary schools (4588 children; 48% Hispanic) in Osceola, Florida	Three intervention components were introduced: modification to school provided meals, holistic healthy lifestyle curriculum, and increased physical activity during the school day	Demographic and anthropomorphic information — including date of birth, gender, grade, and race/ethnicity — were collected by the study coordinators at baseline and each fall and spring. These data and the LifeSource 321 Scale were used to create an age- and gender-specific body mass index (BMI; weight in kilograms divided by height in meters squared) percentile score. Academic data were collected as well.	School-based interventions can improve health and academic performance among low-income schoolchildren. In this study, Hispanic and White intervention schoolchildren were significantly more likely to have higher math scores. African American students did not show a significant difference in math scores between the intervention and control groups.	Weaknesses of this study were that student's eating and exercise habits could not be controlled outside of school. Further, the study population was not chosen at random, and only one school served as the control. Researchers also cited limited geographic variability.	A great complement to this research would be a study that monitored the nutrition and exercise habits of low-income students outside of school. An intervention that extended from school to home and addressed the findings of the second study could be very successful.
Irwin, C., Irwin, R., Miller, M., Somes, G., & Richey, P. (2010). Get Fit With the Grizzlies: A Community-School-Home Initiative to Fight Childhood Obesity. <i>Journal of School Health, 80</i> (7), 333-339. doi:10.1111/j.1746-1561.2010.00510.x.	4th and 5th graders in Memphis City Schools	The intervention consisted of a 6-lesson supplemental mini-unit focusing on nutrition and exercise, PE teacher training, Get Fit activity/food log booklet for students, and a pre and post test.	Survey research was employed which measured health knowledge acquisition and health behavior change using a matched pre/posttest design in randomly chosen schools from all elementary schools in the Memphis City School system. The total number of matched pre/posttests equaled approximately 5% of the total fourth-/fifth-grade population. McNemar's test for significance was applied, and odds ratios were calculated for each question.	Analyses confirmed that there was significant health knowledge improvement through the course of the program (7 of 8 questions). Seven out of 10 health behavior change questions also significantly improved after the intervention.	Weaknesses of this study included the fact that the research plan did not include a control or comparison group of children, which would have strengthened results. Additionally, a follow-up or longitudinal component to this research would have been beneficial. Also, this study focused on a specific geographic area and is not representative.	Further exploration could include a study model that takes parent influence into consideration. Also a study that encompasses a representative population of students across the country could be used to substantiate such curriculum on a wider scale.
Jansen, W., Raat, H., Zwanenburg, E., Reuvers, I., van Walsem, R., & Brug, J. (2008). A school-based intervention to reduce overweight and inactivity in children aged 6-12 years: study design of a randomized controlled trial. <i>BMC Public Health, 8</i> 257-265. Retrieved from Academic Search Premier database.	6-12 year olds in the Netherlands	The main components of the intervention (Lekker Fit!) are the re-establishment of a professional physical education teacher; three (instead of two) PE classes per week; additional sport and play activities outside school hours; fitness testing; classroom education on healthy nutrition, active living and healthy lifestyle choices; and the involvement of parents.	Primary outcome measures are BMI, waist circumference and fitness.	Hypotheses are that the intervention results in a lower prevalence of children being overweight and an improved mean fitness score, in comparison with a control group where the intervention is not implemented. The results of our study will contribute to the discussion on the role of physical education and physical activity in the school curriculum.	The biggest weakness of this study is that it does not include results, and rather outlines the study and evaluation measures. Other weaknesses of the study are that self-report questionnaires were used limiting objectivity. These self-report questionnaires also measure a large amount of concepts to cover all aspects of the intervention.	Complete all aspects of the study using a representative group of students from different geographic areas. It would also be helpful to track results on low-income students as a separate test group to see how the intervention can also be effective in low-income areas.

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Name of Journal, name of article, authors, date published (APA format)	Target population	Intervention/Program	Measures	Results/findings	Study Limitations	Recommendations for further exploration
Maeda, J., & Murata, N. (2004). Collaborating with Classroom Teachers to Increase Daily Physical Activity: The GEAR Program. <i>JOPERD: The Journal of Physical Education, Recreation &amp; Dance</i> , 75(5), 42-46. Retrieved from Academic Search Premier database.	Group of teachers in Hawaii	This article shares strategies and ideas that physical education specialists can implement with classroom teachers to infuse short bouts of physical activity into the school day to supplement physical education.	The physical education specialists worked with the classroom teachers to integrate PA throughout the day	Can succeed in helping them recognize the crucial role that physical activity and movement play in maintaining good health and boosting learning.		Full article on order.
Mahar, M., Murphy, S., Rowe, D., Golden, J., Tamlyn Shields, A., & Raedeke, T. (2006). Effects of a Classroom-Based Program on Physical Activity and On-Task Behavior. <i>Medicine &amp; Science in Sports &amp; Exercise</i> , 38(12), 2086-2094. doi:10.1249/01.mss.0000235359.16685.a3.	243 students	The article presents a study which evaluates the effects of a classroom-based physical activity program on children's in school physical activity levels and on-task behavior during academic instruction of elementary students.		It concluded that a classroom-based physical activity program was effective in increasing physical activity and on-task behavior of the students during academic instruction.		Full article on order.
McNeil, D.A.; Wilson, B.N.; Siever, J.E.; Ronca, M., & Mah, J.K. (2009). Connecting children to recreational activities: results of a cluster randomized trial. <i>American Journal of Health Promotion</i> . 23: 376-387.	Children in grades 3 to 5 and their families in economically vulnerable neighborhoods.	Children in intervention schools were assigned a "connector" (outreach worker) to facilitate participation in recreation activities.	Children's Assessment of Participation and Enjoyment (CAPE) was the primary measure at baseline, middle, and end of 1 year. Other measures included demographics, BMI, child physical and psychosocial health, coordination, and self-esteem.	21% of children in the intervention group increased participation in physical activity versus 10% in the control group (p = .02). Children who increased their activity were more likely to have higher levels of contact with the connectors (31% vs. 8%, p=.001).	Only 29% of eligible families participated. This study was the first use of CAPE as a longitudinal measure. Connectors were not blinded to group assignment.	This study ought to be replicated at schools serving predominantly minority students. This approach should also be tested for changes in physical activity as measured with an accelerometer and for changes in physical fitness.
Mendoza, J.A.; Watson, K.; Baranowski, T.; Nicklas, T.A.; Uscanga, D.K.; Nguyen, Nga, & Hanfling, M.J. (2010). Ethnic minority children's active commuting to school and association with physical activity and pedestrian safety behaviors. <i>Journal of Applied Research on Children: Informing Policy for Children at Risk</i> . 1(1) Article 4. Available at: <a href="http://digitalcommons.library.tmc.edu/cgi/viewcontent.cgi?article=1009&amp;context=childrenatrisk">http://digitalcommons.library.tmc.edu/cgi/viewcontent.cgi?article=1009&amp;context=childrenatrisk</a>	149 fourth grade students from a convenience sample of 8 low-income schools (>=84% of students were eligible for the Federal School Lunch Program at each school). Sample consisted only of schools serving primarily low-income, ethnic minority populations. 61.7% of participants were Latino; 31.5% were African American.	Randomized controlled trial of a walking school bus intervention.	Active commuting was assessed by a written survey instrument previously validated among low-income fourth grade children and shown to have high test-retest reliability. Primary outcome was the percentage of trips to school over one week made by active commuting. Physical activity was measured by an Actigraph accelerometer worn on the hip for seven days. BMI z-scores were used to measure obesity. Pedestrian safety measures were observed by trained research assistants.	Parent self-efficacy (feeling of control over ability to engage in physical activity) and age were positively related to active commuting to school. Distance from home to school was inversely related and had the strongest relationship with commuting to school. Children with more active commuting to school had more daily moderate-to-vigorous physical activity. Age and BMI z-score were inversely related to daily moderate-to-vigorous physical activity. For each additional day of active commuting to school, daily moderate-to-vigorous exercise increased by 4 minutes. Fewer than 50% of children observed performed at least half of pedestrian safety behaviors.	No data were collected on children who declined to participate in the study so comparisons for non-participating children were impossible. Small sample size (n=8 schools). Physical activity data were incomplete for a substantial number of children so researchers made assessments based on only 1 day of valid data rather than 4. Study lacks data on the built environment which impacts active commuting.	This exploratory study used a cross-sectional design. This important area of research would benefit from a longitudinal approach investigating whether a walking/biking school bus intervention program increased levels of active commuting over time.

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Salmon, J., Ball, K., Hume, C., Booth, M., & Crawford, D. (2008). Outcomes of a group-randomized trial to prevent excess weight gain, reduce screen behaviours and promote physical activity in 10-year-old children: Switch-Play. <i>International Journal of Obesity</i> , 32(4), 601-612. doi:10.1038/sj.ijo.0803805.	311 children (78% response; 49% boys), average age 10 years 8 months, recruited from 3low income schools in Melbourne, Australia	Group-randomized controlled trial. Children were randomized by class to one of the four conditions: a behavioural modification (BM) group; fundamental movement skills (FMS) group; combined BM/FMS group; and a control group. Two interventions took place over 19 lessons in addition to regular physical education: behavioural modification including social contracts and FMS.	Primary outcome measures are BMI, waist circumference and fitness. Physical activity was assessed using Manufacturing Technology Inc. (MTI), Florida, USA, Actigraph Model, AM7164-2.2C accelerometers at four measurement points. Screen time behavior was self reported at four points by way of questionnaires. Enjoyment of physical activity was self reported at four points using a five level likert scale. FMS was measured at three points using existing measures.	The BM/FMS group recorded on average - 1.88 BMI units less than the control group. These effects were inclusive of the 6 and 12 month follow ups. Children in the BM/FMS group were more than 60% less likely to be overweight or obese on average over time. There was an increase in reported enjoyment in physical activity by all groups but the control group. There was no significant change for FMS. However, the girls who participated in FMS showed improved movement at follow-up periods.	There was possible contamination of groups based on school interaction. There was not a significant decrease in screen time, a failure of the intervention to reduce TV viewing and instead increasing children's awareness and engagement with the behavior. There was also a disconnect in parental understanding of the purpose of the screen time reporting. Additionally the screen time only included TV.	The BM/FMS intervention had the greatest effect on children's weight status and the FMS intervention had the greatest effect on children's physical activity. Further work is required to determine the feasibility of delivering this kind of program in a 'real world' setting, and its applicability in other countries. It may be necessary to scale down this program in order for its adoption into the already crowded school curricula.
Simons-Morton, B., Parcel, G., Baranowski, T., Forthofer, R., & O'Hara, N. (1991). Promoting Physical Activity and a Healthful Diet among Children: Results of a School-Based Intervention Study. <i>American Journal of Public Health</i> , 81(8), 986-991. Retrieved from Academic Search Premier database.	Elementary School children in Texas	Three intervention components were introduced: classroom health education, vigorous physical education, and lower fat, lower sodium school lunches.	Nutrients from school lunches and total nutritional intake; the amount of physical activity students obtained during physical education were assessed.	Analysis of school lunches showed declines from pretest to posttest for total fat, saturated fat, and sodium. Observation of physical activity during physical education classes indicated an increase from baseline to posttest in the percent of time children engaged in moderate-to-vigorous physical activity from less than 10% of class time at baseline to about 40% of class time at posttest.	Limited to one school district in one state, where food and culture are specific and not the "average" for the target population. Nonrandom assignment, and a small number of sample schools are also limitations.	Investigate parental involvement and after-school activities; is there any carryover to an increase in activity outside of school?
Trost, S.G., Kerr, L.M., Ward, D.S., & Pate, R.R. (2001). Physical activity and determinants of physical activity in obese and non-obese children. <i>International Journal of Obesity</i> , 25, 822-829.	133 non-obese and 54 obese 6th grade children.	Cross-sectional study comparing PA, PA self-efficacy, social influences regarding PA, beliefs about PA outcomes, perceived PA levels of parents and peers, access to sporting and fitness equipment at home, involvement in community-based PA organizations, participation in community sports teams, and hours spent on screen activities for obese and non-obese children.	Number of 5, 10, and 20 minute intervals of MVPA. Self-report measures of PA self-efficacy, social influences regarding PA, beliefs about PA outcomes, perceived PA levels of parents and peers, access to sporting and fitness equipment at home, involvement in community-based PA organizations, participation in community sports teams, and hours spent on screen activities	Obese children demonstrated fewer intervals of 5, 10, and 20 MVPA. Obese children reported significantly lower levels of PA self-efficacy, lower involvement in community organizations promoting PA, and lower levels of PA among father or male guardian.	Cross-sectional study design does not allow researchers to determine causality. Do lower levels of MVPA, PA self-efficacy, and involvement in community organizations promoting PA lead to obesity, or does obesity lead to lower levels of MVPA, PA self-efficacy, and involvement in community organizations promoting PA?	The study's conclusions that interventions should promote PA, boost PA self-efficacy, increase awareness of and access to community PA outlets, and increase parental modeling of PA are important. Future research ought to test such an intervention.
Trost, S.G., Sallis, J.F., Pate, R.R., Freedson, P.S., Taylor, W.C., & Dowda, M. (2003). Evaluating a model of parental influence on youth physical activity. <i>American Journal of Preventive Medicine</i> , 25, 277-282.	380 students in grades 7-12 and their parents	The study tested a conceptual model of the relationship among parental PA, parental support for PA and children's self-efficacy perceptions with PA.	Parents completed a questionnaire about PA habits, beliefs, and support. Students completed a questionnaire measuring physical activity during the previous 7 days and a PA self-efficacy.	The study found that parental support for PA was significantly correlated with youth PA.	Measures of PA were based on student self-assessments. Including measure of PA with accelerometers would improve validity of this measure.	Future research ought to use a longitudinal study to assess the impact of an intervention to build parental support for PA.

Literature Review Summary Matrix - The Kroc Center

Name of Journal, name of article, authors, date published (APA format)	Target population	Intervention/Program	Measures	Results/findings	Study Limitations	Recommendations for further exploration
Voss, L., Hosking, J., Metcalf, B., Jeffery, A., & Wilkin, T. (2008). Children from low-income families have less access to sports facilities, but are no less physically active: cross-sectional study (EarlyBird 35). <i>Child: Care, Health &amp; Development</i> , 34(4), 470-474. doi:10.1111/j.1365-2214.2008.00827.x.	cohort of 121 boys and 93 girls	Article examines PA among lower income students and their use of sports facilities.	Assessed the relationship between parental income, the use of out-of-school sports facilities and the overall physical activity of young children across a wide socio-economic range. Questionnaires were used to establish parental income and parents reported the child's weekly use of out-of-school facilities for structured physical activity.	Children from low-income families attended significantly fewer sessions of structured out-of-school activities than those from wealthier families. Nevertheless, total physical activity, measured objectively over seven continuous days, showed no relationship between parental income and the mean activity level of the children. Nor did we find a relationship between parental income and time spent in higher intensity activity.		full article saved in dropbox
Wilson, D.K., Kitzman-Ulrich, H. (2008). Cultural considerations in the development of pediatric weight management interventions. In E. Jelalian and R.G. Steele (Eds.), <i>Handbook of Childhood and Adolescent Obesity</i> (pp. 293-310). New York, NY: Springer Science and Business Media.	Residents of a U.S. southeastern county 1,194 (18-96 years of age)	1194 residents of a rural U.S. southeastern county were surveyed by telephone interviews. The participants interviewed for this study were selected from a stratified random sample of households with listed telephone numbers. A Geographic Information System (GIS) was used to identify trails, sidewalks, public recreation facilities, and violent crime incidents.	Identified neighborhood and community boundaries around each participant's residence using GIS software, using the same definition for boundaries as defined during the survey interview. Presence or absence of each environmental support, such as recreation facilities, sidewalks, and trails, was identified at the neighborhood and community levels for each respondent and measured PA using the 2001 Behavioral Risk Factor Surveillance System PA module	The study shows that low-SES respondents were less likely to meet the recommendations for PA and reported higher perceptions of unpleasantness of neighborhoods, dogs, crime, and untrustworthy neighbors than did high-SES respondents. Furthermore, although low-SES respondents reported lower access to recreation facilities, they reported higher perceptions of available sidewalks than did high-SES respondents. Environmental perceptions of access and safety were different across the low- and high-SES in this study, only perceptions of having trails was predictive of meeting PA recommendations in the low-SES.	The survey response was modest; but rate is consistent with previously published studies. Another limitation is that the sampling used may limit generalizability. Not all telephone numbers were listed, and thus certain populations, very poor and wealthy residents may have been underrepresented.	Results are consistent with other studies that have shown that having access to trails is an important environmental support for PA among low-SES rural communities. Development and city planners should keep this in mind.



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<p>Zahner, L., Puder, J., Roth, R., Schmid, M., Guldemann, R., Pühse, U., et al. (2006). A school-based physical activity program to improve health and fitness in children aged 6-13 years ("Kinder-Sportstudie KISS"): study design of a randomized controlled trial [ISRCTN15360785]. BMC Public Health, 6147-12. doi:10.1186/1471-2458-6-147.</p>	<p>15 schools (27 classes) in 2 provinces of Switzerland were randomized to the intervention (n = 9) or the control (n = 6) group, stratified by geographic region (urban vs. rural) and by age (1st and 5th grade) focusing on 6 to 13 year olds. All children in participating schools were in the intervention group.</p>	<p>The intervention during one academic year consisted of: 1. two additional physical education classes per week given by trained physical education teachers adding up to a total of five PA classes per week (45 minutes each - 100 additional minutes a week), 2. short PA breaks (2-5 min each) during academic lessons every day, 3. PA home work regarding various activities given, and 4. adaptation of recreational areas around the school. Additionally, teachers, parents and families were encouraged to be physically active throughout the year by way of flyers, and students were encouraged to decrease TV time and increase PA through flyers.</p>	<p>All measurements, i.e. at baseline, at the end of the intervention and again three years later were done within the same three weeks period for all children. All children underwent anthropometric measurements, blood pressure assessment, fitness testing, measurement of PA and they filled out questionnaires. At least 70% of all children agreed to blood sampling and measurements of body composition and bone mineral measurements by dual energy x-ray absorptiometry.</p>	<p>After one year an increase in total PA by accelerometry, an increase in aerobic fitness measured by the 20 m shuttle run, a decrease in percent body fat derived from skinfold measurements and an increase in quality of life as assessed by the child health questionnaire in the intervention group compared to the control group.</p>	<p>Despite the randomization of intervention and control schools, the children, parents and classroom teachers knew the group allocation prior to baseline testing which could bias test results. Additionally, not all investigators were not blinded to group assignment of the children because of the extensive need of manpower for testing and the financial restraints.</p>	<p>As this is a study that is reevaluated after three years more information is available in a subsequent study.</p>
<p>Ziviani, J., Wadley, D., Ward, H., Macdonald, D., Jenkins, D., &amp; Rodger, S. (2008). A place to play: socioeconomic and spatial factors in children's physical activity. Australian Occupational Therapy Journal, 55(1), 2-11. doi:10.1111/j.1440-1630.2006.00646.x.</p>	<p>Census-matched survey data analysed from 318 parents of 6- to 7-year-old children in Australia to examine childhood activity levels in four target geographic areas.</p>	<p>Part of a larger study looking at the activity levels of primary school children older than 6 years using parent interviews and questionnaires, and pedometer readings and tests of physical coordination data. Responses from a large sample of parents were compared on the basis of the families' geographical locations from which socioeconomic status was inferred. Data was analysed to identify child, peer and family factors that influence the levels and types of physical activities children participate in.</p>	<p>Both subjective (parent interviews and questionnaires) and objective (pedometer readings and tests of physical coordination) data was analyzed. Both cross-sectional and longitudinal data are analysed.</p>	<p>Parents from all school areas were equally satisfied with the physical activity level of their childre and the safety of their communities. Children from the low SES area spent more time playing at home and in their neighbourhoods than children from higher SES areas. Compared to high SES families, those from the low SES area were significantly less able to afford access to commercial physical-activity amenities. This difference does not correspond to a change in PA during early childhood but there are consequences as adolescents when this kind of lack of access limits opportunities for skill building and social sports.</p>	<p>This study took place in Australia and was part of a larger study looking at environmental planning as a way to address childhood obesity.</p>	<p>The environmental and behavioral impact of physical space and transport options are issues for planners and developers and need attention. For the next generation to grow up in spaces that encourage sufficient and varied physical activity the environments children grow up in need to be examined.</p>