

# Promoting Healthy Lifestyles:



The Impact of Boys  
& Girls Clubs of  
America's Triple  
Play Program on  
Healthy Eating,  
Exercise Patterns,  
and Developmental  
Outcomes

## Executive Summary

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**Youth Development Strategies, Inc.**



**BOYS & GIRLS CLUBS  
OF AMERICA**

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# **Promoting Healthy Lifestyles: The Impact of Boys & Girls Clubs of America's Triple Play Program on Healthy Eating, Exercise Patterns, and Developmental Outcomes**

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a game plan for the mind, body and soul



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OF AMERICA**

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This study was contracted by Boys & Girls Clubs of America (BGCA) to assess the impact of the Triple Play initiative in their Clubs. Funding for Triple Play was received by BGCA from The Coca-Cola Company and Kraft Foods Inc.

We would first and foremost like to thank the staff and members of the Boys & Girls Clubs who graciously invested their valuable time and effort into collecting the data for this evaluation. The staff at these 30 Clubs worked tirelessly to ensure that we retained as many youth as possible in the three surveys conducted over a 22-month period; a challenge to say the least given the mobility of youth in their communities and the numerous demands made on their scarce resource of time. The Triple Play Clubs that participated in the study are:

- » Boys & Girls Club of Brattleboro, Inc., 17 Flat Street Boys & Girls Club, Inc., Vt.
- » Boys & Girls Club of Carlsbad, Village Unit, Calif.
- » Boys & Girls Club of Corpus Christi, Boys & Girls Club of Corpus Christi, Texas
- » Boys & Girls Club of Craig, Colo.
- » Boys & Girls Club of Evansville, Ind.
- » Boys & Girls Club of Marion County, Boys & Girls Club of Marion County, Fla.
- » Boys & Girls Club of Ottawa County, Okla.
- » Boys & Girls Club of Topeka, Auburn, Kan.
- » Boys & Girls Club of Trenton/Mercer County, N.J.
- » Boys & Girls Club of Tustin, Calif.
- » Boys & Girls Club of Vernon, Texas
- » Boys & Girls Club of Western Broome, The Boys & Girls Club of Western Broome, Inc., N.Y.
- » Boys & Girls Clubs of Central Minnesota, Southside Boys & Girls Club, Minn.
- » Boys & Girls Clubs of Escambia, Fla.
- » Boys & Girls Clubs of Greater Fort Worth, East Side Branch, Texas
- » Boys & Girls Clubs of Greater Lee County, Potter-Daniel Boys & Girls Club, Ala.
- » Boys & Girls Clubs of Mitchell County, Ga.
- » Boys & Girls Clubs of Nash/Edgecombe Counties, Lucy Ann Boddie Brewer Unit, N.C.
- » Boys & Girls Clubs of Naval Base Kitsap, Jackson Park Youth and Teen Center, Wash.
- » Boys & Girls Clubs of Pawtucket, Alfred Elson, Jr. Branch, R.I.
- » Boys & Girls Clubs of Wayne County, N.C.
- » Boys & Girls Clubs of Wayne County, Indiana, Richard E. Jeffers Unit, Ind.
- » Boys & Girls Clubs of Whatcom County, Bellingham Unit, Wash.
- » Ellsworth Air Force Base Youth Activities Center, S.D.
- » Fort Wainwright Youth Services, Alaska



- » Mountain Home AFB Youth Center, Idaho
- » Salvation Army Boys & Girls Club of Washington County, Ohio
- » Waterville Area Boys & Girls Club, Maine
- » Winifred Crawford Dibert Boys & Girls Club of Jamestown, Inc., Jamestown Boys & Girls Club, Inc., N.Y.
- » Whiteman Air Force Base Youth Center, Mo.

The youth were tolerant of the repeated surveys needed to track the initiative's progress – which is no small feat in the context of the many research efforts they are asked to participate in across the settings where they spend time. We would like to especially acknowledge the youth in the control Clubs who were not benefiting from the Triple Play program, but participated in the research nonetheless because they knew it would help “youth in Clubs all over the country.”

The staff and youth at Clubs where we spent time during our site visits were both welcoming and honest, providing us with a wealth of information, meaningful insights and good food.

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# Executive Summary

## Background and Rationale

A decrease in the number of hours young people spend engaged in physical activity and the poor food choices many of them make have increasingly become the focus of national attention. Many complex and interwoven factors contribute to this predicament. These include: loss of play space; a decline in physical education requirements within the school setting; the prevalence of sedentary activities such as television and video games; and, omnipresent calorie-dense and nutrient-deficient fast food. In short, young people currently reside in an environment that de-emphasizes good health and nutrition, while reinforcing inactivity and poor eating habits. These circumstances not only pose health risks to young people, they also present a particularly vexing challenge to youth-serving organizations intent on ensuring the well-being of their participants.

BGCA's Triple Play program is designed to build the capacity of young people to make informed decisions about their health. It is vitally important to establish appropriate health attitudes, knowledge and skills in childhood for a number of reasons. First, the phenomenal growth that occurs during adolescence is second only to that in the first year of life. In addition, total nutritional needs are higher during adolescence than at any other time in the life cycle (Dyuff, 2002). Second, establishing healthy attitudes and practices regarding physical activity and exercise in childhood is essential because they shape behaviors and attitudes in adulthood (Kohl and Hobbs, 1998). In fact, the Secretaries of the U.S. Department of Health and Human Services and Department of Education identified promoting participation of youth in physical activity and sports as a "critical national priority" and one of the "nation's leading health indicators" for the next decade (U.S. Department of Health and Human Services, 2001). And finally, participation in activities that allow youth to establish healthy relationships with both adults and peers has been shown to have a significant effect on youth's likelihood of achieving good developmental and young adult outcomes (Gambone, Klem, & Connell, 2002).

Triple Play: A Game Plan for the Mind, Body and Soul is one of BGCA's national programs that is designed to demonstrate how eating smart, keeping fit and forming positive relationships add up to a healthy lifestyle for Club members ages 6-18. It is a multi-faceted program designed to help young people to become healthy, active and learn new ways to handle stress, maintain a healthy body and form positive relationships. This approach includes three major components that focus on different aspects of healthy living:

- **Mind** – Healthy Habits provides a wide-ranging approach to addressing nutrition education and healthy living. The approach incorporates healthy living and active learning into every part of the Club experience, from the gym to the learning center to the arts and crafts room. To this end, the Healthy Habits

curriculum consists of 10 sessions for each of three age groups: 6-8, 9-12 and teens.

- **Body** – Sports, fitness and recreation programs are designed to get members up and active through daily challenges, games and tournaments to strengthen their body. Additionally, sports leadership clubs allow teens to develop leadership skills and focus on community service and volunteerism.
- **Soul** – Triple Play consciously incorporates elements of belonging, competence, usefulness and influence. For example, sessions have been designed to provide a mechanism for older members to assist younger members, thus providing older youth with a sense of usefulness and influence while helping them reinforce the positive behaviors that are the goal of the program. Social recreation utilizes the Gamesroom and other Club areas to teach and reinforce social and ethical skills young people need to be successful. More than any other area of a Boys & Girls Club, a Gamesroom defines the traditional Club experience. It is a place where kids can play board and table games, compete in a tournament, learn a new activity or just visit with friends. The room is filled with pool tables and ping-pong, but the purpose is much deeper. The Gamesroom staff help members learn skills while teaching them how to work together.

The progression of Triple Play activities are designed to build on knowledge over time, but still be able to stand alone as one-time activities. While each program component can stand alone, integrating them allows Club members to reap more powerful, lifelong benefits. The program design is dynamic, interactive and encourages open discussions. It also features engaging hands-on activities to maintain excitement and interest.

## Purpose and Research Questions

The purpose of this study was to examine whether BGCA's Triple Play program has an impact on youth outcomes in the areas of: 1) healthy nutrition knowledge and behavior, 2) physical activity and increased exercise levels, and 3) social relationship skills. Specifically, the study examines the degree to which Triple Play increases healthy behaviors and developmental outcomes for all youth, and also the degree to which this impact may differ for various groups of youth, such as youth of different ages, ethnic groups and gender, or youth who come into Triple Play with differing levels of healthy behavior or developmental outcomes. Further, a number of organizational (Club) outcomes that are theoretically linked to positive youth outcomes were also examined. The core questions addressed by this study were:

1. *Are youth attending Boys & Girls Clubs that implement the Triple Play program more likely to acquire more nutritional knowledge, eat more healthy foods, be more physically active and be more likely to meet the accepted guidelines for levels of physical activity related to good long-term health than youth attending Boys & Girls Clubs that did not implement Triple Play?*

2. *Do the Triple Play Clubs create more supportive environments that foster a greater sense of mastery and control and positive peer relationships among participants than the Clubs that did not implement Triple Play?*

A consistent finding in intervention research is that the pathway to providing better outcomes for program participants is often through preventing the declines or losses experienced by non-program participants, rather than through boosting performance above that of comparable youth; that is, programs often create different trajectories for participants by maintaining their outcomes level over time while the pathway of their peers declines. So another key question for this study was:

3. *Are any observed advantages for participants due to; (a) maintaining baseline levels on outcomes while comparable youth's declined; or (b) increasing healthy outcomes from baseline levels at a greater rate than other youth?*

The final set of youth-related study questions address the issue of who the intervention might benefit most. We examined whether the trajectory of any observable program impacts varied depending on where youth were at the beginning of the program. We also explored whether the program had differential impacts on youth depending on gender, age and ethnicity – which can be especially important for an intervention targeted at promoting physical activity and healthy eating, which are culturally bound for gender and ethnic groups.

4. *Does Triple Play have a differential impact on trajectories for youth depending on their starting level of risk?*
5. *Does Triple Play have a differential impact on trajectories for youth depending on their gender, ethnicity or age?*

At the Club level, we addressed the following research question about Club structure and culture:

6. *Does Triple Play have any effects on Club level factors such as enrollment, levels of participation, developmental quality of programming and nutritional quality of food served?*

## **Research Design and Method**

A cluster-randomized trial (CRT) design was used to examine the impact of Triple Play on youth. In this design, existing groups of individuals (e.g., clusters or Clubs, schools, classrooms), rather than the individuals themselves, are randomly assigned to treatment and control conditions. This design is especially appropriate for interventions and programs that serve whole groups, rather than individuals. Many social interventions, such as those in afterschool programs and community-based organizations, are designed to influence a larger social group, rather than disparate individuals. These programs also tend to be place-based in that the programs are constrained to existing organizations and places—that is, the intervention is not going to create new

organizations or locations. CRTs have been increasingly used in the evaluation of such place-based initiatives for adolescents, such as smoking, drinking and sex prevention programs (Flay, 2000), community health-promotion initiatives (Murray, 2005), whole-school reforms (Cook, Murphy and Hunt, 2000) and nutrition education (Murray, 1998).

Thirty Boys & Girls Clubs were randomly assigned to treatment and control conditions with pre- and post-assessment of outcomes. The distribution of Clubs across the two groups was 20 treatment and 10 control Clubs. The study spanned 22 months and consisted of three major data collection activities:

- **Youth surveys** were administered three times across the course of the study. Youth surveys were conducted at the beginning of the study (baseline), mid-way through the study and at the end of the study to assess the impact of Triple Play on changes in youth outcomes and experiences at the Clubs. The baseline survey was administered in March 2006, the mid-survey was administered in December 2006 and the final follow-up survey was administered in December 2007. The survey collected data on background and participant information, knowledge of healthy eating, healthy eating patterns, engagement in physical activity, sense of mastery and control and quality of peer relationships, as well as youths' experience of general program quality and supports for healthy habits.
- **Implementation site visits** were conducted with a subset of Triple Play Clubs once in the first year and once in the second year. Site visits included observation of Triple Play and general Club activities, interviews with key staff and focus groups/ interviews with youth. A total of 10 sites were visited in Year 1, and a total of nine sites were visited in Year 2. Site visits were conducted in the fall of each study year. Data collected on site visits were used to create qualitative measures of the supports for and barriers to implementation; adequacy of training and resource materials; perceptions of staff and youth on the value of Triple Play; and the quality and relevance of Triple Play activities including instruction strategies, engagement of youth, role of youth and expectations.
- **Quarterly implementation reports** were provided by each Triple Play site, detailing participation, activities and other factors related to Triple Play. The reports were used to collect data on Triple Play program offerings, participation levels and outreach and retention efforts.

## Club Sample

The sampling frame or group of Clubs eligible for the study was based on Boys & Girls Clubs who responded to a national office request for grant proposals for funding and program resources to implement the Triple Play program in their Clubs. Clubs that applied had not previously implemented Triple Play in their programming. The 18 top-rated Clubs from each of the geographic regions (five total) were included in the region-stratified population from which Clubs were recruited (for a total of 90 potentially eligible Clubs). It was determined that, to provide the statistical power needed, four

treatment Clubs per region and two control Clubs per region would be used for a total of 30 study Clubs (20 treatment and 10 control Clubs). Clubs were randomly assigned to treatment and control conditions.

A comparison of the demographic characteristics of the treatment and control Clubs participating in the study to national Club statistics indicated that treatment Clubs were slightly lower minority status than control Clubs or Clubs nationally, and somewhat older in their membership. Clubs in both treatment and control conditions were larger (by about 100 members) than Clubs nationally.

## Youth Sample

The youth who participated in the study were between the ages of 9 and 14 when the initial sample selection was completed in March 2006, resulting in a total of 2,242 youth chosen for the study. At baseline, two-thirds of the youth in the study sample were in the 9 to 11 year old age group. Most of the youth in the study are minority (68 percent), with the largest group of youth being African-American (36.5 percent). White youth make up approximately 31 percent of the sample, while Hispanic youth and other racial groups make up 11 percent and 21 percent of the sample, respectively. Slightly more than half of the sample is male (52 percent). The vast majority of youth in the study report they are doing fairly well in school (Cs and higher, 86 percent). With respect to Club attendance, the majority of youth report they have attended their Club for a year or more (67 percent), with nearly 40 percent attending the same Club for three years or more. The youth also report they attend the Club frequently, with 84 percent of the youth reporting that they attend a few times a week or everyday.

## Key Findings

Triple Play has a significant impact across a wide range of outcomes for youth, as well as on the Clubs' culture and structure. The findings below are classified into four major areas: 1) youths' knowledge and behaviors related to healthy eating and exercise behaviors; 2) general youth developmental outcomes of mastery and control and quality of peer relationships; 3) impacts on subgroups (ethnic, gender and age) and 4) Club structure and culture. Positive impacts for youth were found on nutritional knowledge, healthy eating patterns, physical activity, sense of mastery and control and the quality of peer relationships. With respect to the Club culture and structure, Triple Play had positive effects on participation and involvement of youth, supports for healthy behaviors, and on general supports and opportunities for youth at the Club.

Table 1 displays the list of outcomes that were measured and illustrates for which outcomes Triple Play had a general impact for youth in the Clubs. Some of the impacts that were not significant for all youth were significant for some subgroups of youth attending the Triple Play Clubs. These details are included in the description of results below.

# Table 1

Outcome Measure	Impact	Outcome Measure	Impact
<b>Nutrition Knowledge</b>		<b>Sense of Mastery and Control</b>	
Total nutrition knowledge	•	High sense of mastery and control	•
Knowledge of portion control	•	Reduced low sense of mastery and control	•
Knowledge of specific nutrients			
<b>Healthy Eating Behavior</b>		<b>Quality of Peer Interactions</b>	
Healthy foods eaten previous day	•	Positive peer relationships	•
Fruits/vegetables eaten previous day	•	Reduced negative peer relationships	•
Days eating breakfast previous week			
<b>Physical Activity Levels</b>		<b>Youth Participation</b>	
Average days per week exercising for 1 or more hours	•	Frequency of youth attendance at Club	•
Average minutes per week spent exercising	•	Youth participation in physical activities offered at Club	•
Increased percentage of youth engaged in regular vigorous activity (at least one hour five days a week)	•		
Reduced percentage of youth who are inactive (less than 30 minutes per day for four days a week)	•		
<b>Support for Healthy Eating</b>		<b>Quality of Developmental Supports and Opportunities</b>	
Type of food offered to youth at Club	•	Supportive relationships	•
Teaching healthy food choices at the Club	•	Physical and emotional safety	•
		Opportunities for participation in skill-building activities	•
		Opportunities for participation in leadership and decision-making	•

• = Statistically significant impact found in this area

## Knowledge of and Engagement in Healthy Habits

**Key Finding 1: Triple Play improves youth nutrition knowledge.** Youth in Triple Play Clubs increased from 34 percent to 42 percent in the percentage correct across all seven nutrition knowledge items (gain of 8 percentage points), while control Club youth decreased slightly from 35 percent to 34 percent (a loss of 1 percentage point) for a differential gain for Triple Play youth of 9 percentage points. For portion size knowledge, Triple Play youth increased from 34 percent correct to 45 percent correct (an 11 percentage point gain), while control Club youth decreased from 36 percent correct to 35 percent correct (a loss of 1 percentage point) resulting in a differential gain for Triple Play youth of 12 percentage points. Triple Play did not appear to impact knowledge of specific nutrients in foods and their value.

**Key Finding 2: Triple Play slows – or prevents – the typical developmental decline in eating healthy foods.** Triple Play youth show smaller or no drops in the number of healthy foods and the number of fruits and vegetables eaten over the course of the study, while control youth show significant declines in both outcomes. On average, by the end of the study period, youth in Triple Play Clubs ate significantly more healthy foods in a day than those in treatment Clubs (7 vs. 5.7). For Triple Play youth, the trend shows a drop in the number of healthy foods eaten the day before from baseline to the midpoint survey, but an increase between midpoint and final survey. For the control youth this number continued to drop over the study period. Triple Play also reduces the decline in the number of fruits and vegetables consumed by youth, and actually reverses this trend slightly for youth in Triple Play Clubs. At baseline, both Triple Play Club and control Club youth ate an average of 2.9 fruits or vegetables the day prior to the survey. By the end of the study, that number had increased to 3.2 for Triple Play youth but dropped to 2.3 for control Club youth.

**Key Finding 3: Triple Play has little or no impact on the overall frequency of eating breakfast.** Youth in Triple Play and control Clubs show declines in the frequency of eating breakfast over the course of the study. The study showed no evidence that youth at the Triple Play Clubs ate breakfast more frequently than youth at the control Clubs. The number of days eating breakfast dropped over the study period for all groups, but dropped at a slower rate for some Triple Play youth than it did for youth at control Clubs.

**Key Finding 4: Triple Play benefits youth who already eat healthy, as well as those with unhealthy eating habits.** Triple Play had a strong positive impact for youth who were already healthy eaters in helping them maintain their healthy eating habits relative to their control group peers. About half (53 percent) of Triple Play healthy eaters maintained their level of eating healthy foods every day compared to only 18 percent of control group healthy eaters. Triple Play also has a strong positive impact in improving eating patterns for those who started the study with less healthy eating habits. At final follow-up, 51 percent of Triple Play unhealthy eaters had improved their eating habits, compared to only 21 percent of the unhealthy eaters in the control group.

**Key Finding 5: Triple Play does benefit youth who start out eating breakfast infrequently.**

While there was no overall impact on breakfast eating, Triple Play did have a significant positive impact on those who did not start out with healthy breakfast eating patterns (e.g., who ate breakfast less than two days a week). Approximately 52 percent of the Triple Play infrequent breakfast eaters ate breakfast more often by the end of the study compared to 38 percent of control group infrequent eaters. Triple Play also had a small positive impact for youth who already ate breakfast regularly in helping more of them maintain their healthy eating habits relative to their control group peers (46 percent vs. 38 percent, respectively).

**Key Finding 6: Triple Play increases the amount of time youth spend engaged in physical activities and exercise.**

It increases the average amount of time that youth spend in at least moderate physical activity each day and the average number of days that youth engage in at least one hour of physical activity in a week. The impact was Triple Play youth engaged in an average of 10 more minutes a day of physical exercise than control youth. This translates into an average of nearly an hour per week (49 minutes) and nearly three-quarters of a day more activity for youth who participate at Triple Play Clubs versus their peers at non-Triple Play Clubs. In addition, by the end of the study, Triple Play youth had increased the number of days they exercised for at least 60 minutes to 3.2 days (an increase of more than three-fourths of a day on average), while control Club youth actually decreased the number of days of high physical activity—to 2.5 days.

**Key Finding 7: Triple Play helps youth meet recommended standards of physical activity levels.**

It does so by increasing the percentage of youth who engage in an hour or more of exercise at least five days a week and decreasing the percentage of youth who are relatively inactive (i.e., engage in physical activity 30 minutes or less four or more days a week). By the end of the study, 35 percent of Triple Play youth reported engaging in regular, vigorous activity of an hour or more at least five times a week (an increase of 10 percentage points) in contrast to their control Club peers who reported no change in their engagement in vigorous physical activity (28 percent at the beginning and end of the study). Triple Play also has a positive impact on getting sedentary or regularly inactive youth to engage in at least moderate physical activity. At the beginning of the study, 41 percent of each group was regularly inactive (exercising for less than 30 minutes four or more days per week). By the end of the study there was a difference of 15 percentage points between the Triple Play and control Clubs – 34 percent of Triple Play youth were sedentary compared to 49 percent of control Club youth.

**Key Finding 8: Triple Play has the strongest impact on increasing physical activity levels for more sedentary youth.**

Youth who were already highly active (one or more hours of exercise at least five days a week) at the beginning of the study tended to stay highly active, although there were slightly more Triple Play youth who maintained that level (75 percent versus 68 percent respectively). In contrast, Triple Play appears to have a strong impact on helping youth who are sedentary at baseline become more active. Approximately 44 percent of these Triple Play youth who reported being relatively inactive at the beginning of the study (30 minutes or less four or more days a week) increased their physical activity levels by the end of the study, while only 27 percent of the control Club youth moved from inactive to moderately active.

## Developmental Outcomes

**Key Finding 9: Triple Play improves youth's interactions with peers at the Club.** It does so by both increasing the amount of positive peer interactions that youth experience at the Club and decreasing the amount of negative peer interaction reported (measured using four scales – communication, conflict, emotional support and practical support – combined into a single measure of peer interactions). While the percent of youth with high levels of peer interactions rose slightly over the study period for the Triple Play Club youth (from 26 percent to 31 percent), it decreased for the control Club youth (24 percent to 20 percent). With respect to low peer relationships, the proportion of Triple Play youth in this category declined 10 percentage points over the study period (from 62 percent to 52 percent), while it remained the same for the control Club youth (62 percent to 61 percent).

**Key Finding 10: Triple Play helps both youth who start with good quality peer relationships and those who start with poor ones.** Another way to examine the impact of Triple Play on youths' peer interactions is to look separately at youth who started the study with good peer relationships and see if they were maintained and to look at youth who started the study with poor quality peer relationships and see if they improved. For youth who reported negative relationships at baseline, there were significant differences in the percentage of Triple Play and control Club youth who reported improved peer interactions by the end of the study (44 percent versus 33 percent, respectively). Similarly, there were significant differences between Triple Play and control Club youth in the percentage of youth who maintained high-quality levels of peer interactions from baseline to the end of the study (66 percent versus 52 percent, respectively).

**Key Finding 11: Triple Play slightly increases youths' sense of mastery and control.** Mastery and control measures the extent to which a person feels they are able to affect/influence what happens to them in life by their behavior. The intent of Triple Play is to strengthen this outcome for youth through the competence they develop physically, nutritionally and socially. The proportion of youth in treatment Clubs who had high levels of mastery and control grew modestly from baseline to the end survey (from 17 percent to 22 percent) but the proportion in control Clubs fell during this period (from 20 percent to 15 percent). This is a small but significant impact for youth at Triple Play Clubs. While the magnitude of the effect is small, this can be a very important mediating outcome since it has been linked with lower levels of depression for girls and lower rates of drinking and smoking for boys (Avison and McAlpine, 1992; Piko, 2005). It is also important because lower levels of mastery and control have been shown to be associated with lower levels of physical activity (Biddle & Armstrong, 1992; Reynolds, et. al, 1990; Valois, Umstatted, Zullig, & Raheem, 2008).

**Key Finding 12: Triple Play helps youth who start out with high mastery maintain it as they age.** The proportion of youth in treatment Clubs who had high levels of mastery and control grew modestly from baseline to the end survey, but the proportion in control Clubs fell during this period. When considering youth with low levels of mastery at baseline, there were no significant differences in the percentage of Triple Play and

control Club youth who reported improved sense of mastery and control by the end of the study (49 percent versus 45 percent, respectively). However, there were small, but significant differences between Triple Play and control Club youth in the percentage of youth who maintained high levels of mastery from baseline to the end of the study (70 percent versus 63 percent, respectively).

## Impact on Subgroups

**Key Finding 13: Triple Play generally benefitted White youth and African-American youth more in health-related outcomes than it did Hispanic youth.** The impact of Triple Play on eating and physical activity outcomes differed by ethnic group. Triple Play had no impact on the number of healthy foods eaten by Hispanic youth, but it did for the White and African-American Triple Play youth. Hispanic youth also benefitted less from Triple Play than their African-American or White peers regarding minutes of exercise (a 10 minute advantage versus a 15 minute advantage, respectively). Conversely, Triple Play improved Hispanic youth's frequency of eating breakfast (by slowing the rate of decline with age) but did not do so for the other two ethnic groups.

**Key Finding 14: Triple Play most significantly benefits girls in two ways: they exercise an average of two hours more per week than their control group counterparts and they are more likely to have high levels of mastery and control.** It is well documented that adolescent girls are less physically active and participate in physical education less than their male counterparts (Trost, Pate, & Dowda, 1996; Trost, Pate, Sallis, Freedson, Taylor, Dowda, & Sirard, 2002). This can be particularly problematic if it leads to obesity for girls; some research indicates that obesity among adolescent females is associated with both lower status attainment and a higher prevalence of depressive symptoms in young adulthood (Merten Wickrama, & Williams, 2008). Triple Play girls increased their physical activity level by nearly seven minutes a day, while control Club girls declined more than eight minutes a day – for a net difference of about 15 minutes more exercise per day for Triple Play girls by the end of the study. Triple Play girls, by the end of the study, are engaging in nearly two hours more physical activity a week than their control peers. This effect was more moderate for boys, who increased their activity levels by approximately three and one-half minutes a day—which translates roughly into slightly less than an additional half-hour of physical exercise a week.

There were also gender differences in the impact of Triple Play on mastery and control. The proportion of Triple Play girls with high levels of mastery and control increased by seven percentage points (from 16 percent to 23 percent) the proportion of girls in control Clubs at this level decreased by eight percentage points (from 21 percent to 13 percent), while there was no significant impact for boys.

**Key Finding 15: While youth of all ages benefitted from Triple Play, older youth – aged 13 and up – benefitted the most.** Youth aged 13 and older showed substantially greater improvements than did younger youth (aged 9-12) in the number of healthy foods eaten and in breakfast frequency. Older youth ate, on average, more than two more healthy

foods (2.24) by the end of the study compared to their control peers, while younger youth had about a one-and-a-half (1.70) food advantage over their peers. While younger Triple Play youth did not show an impact on their frequency of eating breakfast, older Triple Play youth increased in the number of days they ate breakfast by almost one day (.73) while their control peers declined.

All youth showed an impact in the amount of daily exercise they got – but it was slightly greater for older youth. Older Triple Play youth had a nearly 12-minute advantage in the amount of exercise they got, while younger Triple Play youth had an advantage of 9.8 minutes a day compared to their control Club peers.

## Club Structure and Culture

**Key Finding 16: Triple Play ameliorates declines in general Club attendance and increases participation in physical activities offered by the Club.** In particular, youth attend the Club more frequently in Triple Play Clubs. While the proportion of youth participating every day or almost every day declined over the course of the study for both groups of youth – it dropped significantly less for Triple Play Clubs (from 70 percent to 56 percent) than for control Clubs (from 73 percent to 35 percent). More Triple Play youth also participated in structured physical activities offered by the Club than did youth in the control Clubs. The two groups started the same (at 84 percent and 85 percent, respectively) but while the percentage of youth participating in activities like jump rope, home run challenges, tag, walking, biking, jogging/running, etc. dropped to 78 percent in the control Clubs, it increased to 88 percent in the Triple Play Clubs.

**Key Finding 17: Triple Play Clubs provide significantly more supports for healthy eating than do control Clubs.** A key aspect of encouraging youth to engage in healthier eating habits is modeling the appropriate food choices. Triple Play Clubs make a concerted effort to improve the quality of food offerings – both with respect to organized snacks, and also the optional vending machine choices available to youth. Triple Play Clubs also encourage healthy choices through direct instruction of the Healthy Habits curriculum. There were much greater increases for Triple Play than control Clubs in how often youth were provided healthy food choices as a snack when at the Club (32 percent growth in treatment Clubs vs. 9 percent growth in control Clubs).

In Triple Play Clubs youth also report learning more about making healthy food choices at the Club than do youth in control Clubs. An additional 20 percent of Triple Play youth said they learned about healthy food choices at the Club (from 56 percent to 76 percent) at the end of the study, while the percentage of control Club youth reporting learning about making healthy food choices remained unchanged.

**Key Finding 18: Triple Play improved the degree to which youth experienced supportive relationships, a sense of physical and emotional safety, and opportunities for skill-building and leadership.** The levels of supports and opportunities youth experience while in the Clubs were measured in this study for two reasons. First, these measures can be viewed as indicators of the general youth development quality of a setting. Second, they have

been shown in research to be linked to better short- and long-term outcomes for youth as they mature.

The developmental quality experienced by youth at both Triple Play and control Clubs was about the same at the beginning of the study. Triple Play youth, however, experienced increases in the quality of supportive relationships; physical and emotional safety; and in skill-building and leadership opportunities over the course of the study. Triple Play youth showed a 10 percentage point gain in youth experiencing high-quality relationships at the Club. Youth in Triple Play Clubs show a small, steady increase in the percentage that report experiencing high levels of safety (from 12 percent to 16 percent), while youth in control Clubs showed a slight decrease of 4 percentage points. Youth in Triple Play Clubs show a small, steady increase in the percentage that report experiencing high levels of skill building (from 21 percent to 28 percent), while youth in control Clubs showed a slight decrease of 2 percentage points. A similar impact can be seen in opportunities to participate in decision-making and leadership at the Club. Youth in Triple Play Clubs show a decline in the percentage that report experiencing low levels of decision-making and leadership opportunities (11 percent) while youth in control Clubs showed a smaller decrease of 1 percent.

## Discussion

This study demonstrated a range of impacts on health-related knowledge and behaviors for youth, as well as on organizational outcomes for participating Clubs. However, the overarching finding is the demonstrated effectiveness of a developmental approach to improving youth's trajectories on outcomes with direct and significant social implications – health and social psychological well-being. The longer-term negative outcomes that can be potentially prevented with this approach (e.g., obesity, poor nutrition, depression, cigarette smoking, etc.) have expensive and wide reaching societal implications. The longer-term positive outcomes that can be potentially fostered with this approach may have broad implications for quality of life issues (e.g., a habit and enjoyment of physical exercise, healthy nutrition, good peer relationships and good mental health).

### Who Benefited Holds Important Lessons

What is in some regard most remarkable about these results is the strength and consistency of impacts given the type of program model implemented. The approach here was to infuse the Club environment with supports and opportunities for engaging physical activities, healthy nutrition and positive peer influences rather than to design stand-alone activities targeted at the outcomes of interest. In addition, these findings are consistent across a range of Clubs, all of which had different Triple Play implementation styles and approaches, and served a diverse population of youth across the country. These Clubs also had varying degrees of resources available to them. Combined, these factors suggest that Triple Play has sustainability as a program that can produce impacts under a wide range of conditions.

The program did not target individual youth who were already at-risk or who were overweight or had poor nutrition. Rather, it took a holistic approach to incorporating healthy activities that were attractive to youth, into a youth-focused, developmentally oriented environment. Nevertheless, a consistent pattern in the findings is that the youth who were more at-risk, or more in need, prior to the implementation of Triple Play seem to derive the greatest benefits from the program. The least active, unhealthy eaters with lower levels of peer support were more significantly impacted by the Triple Play components than their healthier peers. But happily, Triple Play also showed a protective effect for youth who started with healthy habits – it protected them from the declines in physical activity and nutrition that were demonstrated by youth not in the program as they aged. So it can also help prevent youth from becoming sedentary, unhealthy eaters.

There were notable impacts of this program for girls. They benefitted the most in terms of the positive impact shown on levels of physical activity. And they also benefitted the most in terms of high levels of mastery. The proportion of Triple Play girls with high mastery increased, while the proportion of control girls in this group declined. Given the linkage between high levels of mastery and lower levels of depression for adolescent girls this is an important effect.

While this study did not have as refined participation data as might be desired, it also suggests that more frequent participation in these activities leads to better outcomes. Youth who participated in activities twice a week or more were more likely to derive the benefits of the program than were those participating less regularly. This highlights the need for out-of-school programs to be available – and attractive – enough so that young people can, and will, participate routinely.

## **Control Groups Are Critically Important In Evaluating Out-Of-School Settings**

Another important aspect of these results is that they, again, highlight the importance of using an experimental design to evaluate youth programs. Many afterschool programs and community-based organizations are designed to influence a larger social group, rather than disparate individuals. Like the programs at Boys & Girls Clubs, activities are integrated into an existing program or organization and the random assignment of youth to treatment and control groups is neither feasible nor desired. The type of randomized cluster design used here is especially appropriate for these types of interventions and programs; and it preserves the power of random assignment without having to distort the delivery of program services.

Many of the impacts found here would not have been detected without the control group data. When youth's outcomes decline in the absence of a program, and youth in the program maintain existing levels of the outcome, the only way to detect these benefits is with a control group – or by demonstrating the “counterfactual” – what would have happened in the absence of the program. Without a point of comparison we run the risk of underestimating the value of programs and interventions – especially for youth – since we often do not have data on what trajectories outcomes of interest may take

during a period of so much developmental change. This methodology is increasingly being adopted by educational researchers for the same reasons.

## Remaining Questions

Some further research that would add to our understanding of this approach is to explore whether this model would work in other afterschool settings. Boys & Girls Clubs have a specific culture that combines physical activity, games and instruction; participants experience both structure and free play. More singular programs and settings may or may not have the same results.

It would also be beneficial to the field to know whether there are specific threshold levels of participation that are needed to achieve these effects. How much do youth need to be exposed to an environment that intentionally supports healthy behaviors in order for them to benefit? How many weeks are needed to achieve the desired outcomes?

Even without the answers to these questions, it is clear that wide implementation of the Triple Play model represents an opportunity to impact the health of a significant number of our nation's youth.

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