



---

# **Evaluation of the Coach Across America Sports-Based Youth Development Program**

## **FINAL REPORT**

**Amy Windham, Ryan Basen, Quy Nhi Nguyen, Denise  
Mitchell**

OCTOBER 2014



# **Evaluation of the Coach Across America Sports-Based Youth Development Program**

FINAL REPORT

**October 2014**

**Amy Windham, Ryan Basen, Quy Nhi Nguyen, Denise Mitchell**



**AIR<sup>®</sup>**

AMERICAN INSTITUTES FOR RESEARCH<sup>®</sup>

6003 Executive Blvd., Suite 300  
Rockville, MD 20852  
301.592.8600

**[www.air.org](http://www.air.org)**

Copyright © 2014 American Institutes for Research. All rights reserved.

10/10/14

# Contents

	<b>Page</b>
Executive Summary	1
Background and Significance	2
Evaluation Aims.....	2
Up2Us and Coach Across America .....	3
Evaluation Methods	5
Data Collection and Measures .....	5
Sample and Follow-up .....	8
Data Analysis .....	13
Results	14
Overall.....	14
High intensity versus low intensity programming .....	16
Conclusions	20
Physical Activity.....	20
Nutrition.....	20
High Impact Attributes .....	21
References	23
Appendices	1
Appendix A. PAQ Scoring Instructions.....	1
Appendix B. HIA Scoring Instructions.....	4
Appendix C. Program outcomes by youth attendance.....	7
Appendix D: Number of Sessions Offered and Attended by CAA Program .....	9
Appendix E: Survey Response Rates by CAA Program .....	12
Appendix F: Data Cleaning Steps.....	15
Appendix G. Program Outcomes by Grade Level .....	17
Appendix H. Outcomes by Sex.....	19
Appendix I. Outcomes by Program Intensity .....	21

## Executive Summary

American Institutes for Research (AIR) conducted external data analysis to evaluate the impact of the Coach Across America (CAA) program on underserved youth nationwide during the 2013-2014 school year. Specifically, AIR examined changes in youth outcomes concerning their physical activity levels, nutrition habits, and manifestation of attributes shown to contribute to sports and life skills (High Impact Attributes).

CAA is the flagship program run by Up2Us, a national coalition of 1,000 youth sports organizations committed to using sports for social change. Up2Us recruits, trains, and places CAA coaches with its affiliates, preparing the coaches to work with underserved youth who are the primary participants in the affiliates' programs.

Up2Us collected survey data from more than 2,000 youth in 19 cities both when they began and completed their participation in an affiliate's program that school year. Up2Us shared the data with AIR, which then conducted the data analysis to measure youth outcome changes over this time span – both overall changes and changes based on dosage (as defined by how many sessions affiliate programs offered youth).

Overall findings revealed that CAA was correlated with significant improved physical activity levels as well as reduced consumption of soda and fried potatoes. Youth reported a decline in 100 percent fruit juice consumption, however. Regarding High Impact Attributes (HIA), youth demonstrated an increase in manifesting the attributes labeled Prosocial connections and Plan B thinking. They also reported improvements in their answers to three decision-making questions designed in part to measure their self-esteem and independent thinking.

Findings by dosage indicated significant, linear correlations between how many events the affiliate programs offered and changes in both youth physical activity levels and consumption of fried potatoes. Other findings by dosage were not conclusive.

Many of this study's results are reflected by previous research into the influence of coaching on youth development, and the impact of organized sports on youth nutrition habits and physical activity levels.

## Background and Significance

We need to know more about how coaches can encourage youth to build life skills and make better decisions concerning their physical health, particularly youth in underserved communities. Research shows that coaches have the ability to affect youth's decision-making. A young athlete's personal interactions with coaches are an important influence on the athlete's positive development. Further, coaches trained in research-based, coaching-education programs and positive youth development can minimize negative experiences reported by youth sports participants. High-quality informal coach training alone can yield an increase in young athletes' personal skills. The addition of formal training, including classroom-based and practical training, substantially enhances coaching effectiveness. Many, if not the majority of, youth coaches lack specific training in the science of coaching, and coach training itself is an emerging science; as such, many coaching interventions lack solid theoretical bases (Beatty & Fawver, 2013; Bornstein, 2011; Vella, et. al., 2013a).

Given these research findings and challenges, offering established coaching guidelines to coaches can empower them to provide critical aid to disadvantaged youth. Coach Across America (CAA), a sports-based youth development (SBYD) program run by the coalition Up2Us, assesses, places, trains, and supports adult role models to handle coaching duties. CAA also demands that host organizations commit to a rigorous process for preparing these coaches (Up2Us, <http://up2us.org>).

American Institutes for Research (AIR) conducted an external evaluation of CAA to assess how CAA impacts the thousands of young athletes it serves. The purpose of this evaluation was to expand the understanding of what ways and to what extent the coaching and role modeling of CAA-trained coaches correlate with improved outcomes for youth—and to inform CAA and other SBYD programs nationally .

### Evaluation Aims

CAA aims to reduce youth violence; promote physical, mental, and social health; and improve academic achievement for youth in underserved communities. Focusing on health outcomes, the evaluators specifically examined CAA's ability to influence the physical activity, healthy decision-making, and nutrition habits of youth participants. We addressed the following research questions:

1. To what extent does working with a CAA coach at a host site increase the amount of physical activity that the youth participants are engaging in?
2. To what extent does working with a CAA coach at a host site improve the nutrition habits of youth participants?
3. To what extent does working with a CAA coach at a host site increase the development of attributes that contribute to healthy decision-making?

In addition to assessing these changes in outcomes, we tested whether program effects were larger in programs offering a greater intensity of activity as measured by number of sessions or practices offered. These analyses addressed the research question:

4. Do youth participating in programs that meet more frequently demonstrate larger effects on the physical activity, nutrition, and personal attribute outcomes compared to youth participating in lower-intensity programs?

This report describes Up2Us and the CAA program, followed by the methodology and measures used in the evaluation, results of the data analyses, and conclusions about CAA's impact on youth participants contextualized within research detailing impacts of coaching in SBYD programs. Appendices include the data collection instruments, scoring procedures, CAA site level descriptive data, and summary tables of results.

## **Up2Us and Coach Across America**

Up2Us is a national coalition of more than 1,000 organizations committed to using sports for a social change in addition to its athletic mission via sports-based youth development (SBYD) programs. Striving to harness the power of sports to reduce youth violence and promote health and academic success, Up2Us organizes nationwide community training programs and maintains a research center in Boston. Headquartered in New York, Up2Us seeks to empower sports programs to become a united force for meaningful social change.

SBYD is the core of Up2Us' mission. SBYD activities feature organized sports geared towards positive youth development for disadvantaged youth. The SBYD environment involves a coach serving as a mentor, who often hails from the same community as participants; and a primary focus on youth development outcomes including life skills, nutrition, violence prevention and academic achievement. Up2US champions SBYD because participating in sports programs has been proven to increase youth physical activity levels (Mandic, et. al., 2012; Nelson, et. al., 2011), and SBYD programs have been credited with helping youth reduce obesity and participation in violence; and increase knowledge of nutrition, physical activity, and academic achievement (Rosewater, 2010; Bohnert and Ward, 2013; Berlin, et.al, 2007; Le Menestrel & Perkins, 2007; University of Chicago, 2012; Gould, et. al., 2012).

Up2Us' cornerstone SBYD program is Coach Across America (CAA), which develops a workforce of coach-mentors by training and placing adult role models within sports programs, to foster SBYD in underserved communities. Launched in 2010, CAA served 50,000 youth in 33 states during the 2013-2014 program year. CAA's desired outcomes include increasing youth levels of physical activity and improving their ability to make health-seeking decisions (Program Model); its overarching goal is "to develop a dedicated corps of SBYD coaches who inspire youth in marginalized urban communities to live healthier, safer and more prosperous lives."

Organizers developed CAA to address alarming and interrelated problems. Childhood obesity has become a major national issue, particularly for disadvantaged youth. Obesity prevalence for children from low-income, low-education households increased more than twice as quickly as obesity prevalence for all American children ages 10-17 over a four-year span, according to a study by Singh, et. al. (2010). CDC has identified unhealthy eating habits and physical inactivity as major sources of this obesity problem (CDCa), classifying them as priority health risk behaviors "that contribute markedly to the leading causes of death, disability and social problems" on par with alcohol, tobacco, and drug use (CDCb). Schools in low-income

communities have simultaneously deemphasized physical activity by cutting and eliminating free physical education and sports programs, or offering “pay-to-play” models because of fiscal problems (Rausch, 2006). The consequence is clear: “With even fewer opportunities to participate in quality, structured sports programs,” Up2Us notes, “all children – and particularly those from low-income families – become even more vulnerable to unhealthy lifestyles and risky behavior.” Up2Us therefore steers CAA to youth in low-income communities with above-average childhood obesity rates.

Prospective CAA coach-mentors are required to undergo at least 53 hours of training orienting them to CAA and their individual program, as well as youth development and mentoring strategies—including SBYD foundations, the brain and trauma, behavior management and culture—to help them cultivate caring, trust-based relationships with youth, and to foster SBYD outcomes. By participating in the requisite CAA training, coaches should be able to manifest to youth the links between sports skills and life skills, devise strategies for managing difficult youth behavior, and develop positive cultures on their teams and at their host organizations (among other coach certification program outcomes). Each coach serves about 100 youth per year and is encouraged to recruit five community volunteers to assist with CAA services at the host site. Some of these coaches work full-time (1,700 hours annually), while part-time coaches work between 300-900 annual hours depending on their status. They typically serve one of these roles: Coach, program manager, referee, camp leader, nutrition educator, recess leader.

Up2Us-sanctioned host sites must submit program plans encompassing SBYD elements and meet additional criteria including: serving as a liaison between CAA staff and coaches, completing CAA evaluation and reporting requirements, purchasing General Liability Insurance, and supporting coaches’ professional development as well as program costs. Up2Us applies best practices derived over four years from an AmeriCorps grant to select host sites.

Up2Us has engaged hundreds of AmeriCorps members as CAA coach-mentors since securing a Corporation for National and Community Service (CNCS) National Direct Grant in 2009, and these coach-mentors have practiced SBYD programming focused on health and wellness outcomes addressing CNCS National Performance measures H5 (physical activity) and H6 (nutrition) with thousands of youth. Up2Us plans to continue working with AmeriCorps to operate CAA, addressing the CNCS Healthy Futures priority by helping underserved youth: increase physical activity, improve physical fitness, and develop skills leading to healthy decision-making.



## Evaluation Methods

This evaluation plan was designed to examine change in outcomes as a result of taking part in CAA-affiliated programs. Randomized designs provide the strongest evidence of program effectiveness. Random assignment to a treatment versus control condition was not feasible for this project, however. Therefore, we employed a quasi-experimental pre-post design to compare outcomes for youth before and after participation in the CAA program. Secondly, because there was no opportunity to select a comparison group (either randomized or based on a convenience sample), we conducted analyses testing whether high intensity programming was more effective than low intensity programming.

### Data Collection and Measures

Up2Us collected data on 6,288 youth participants spanning 80 CAA programs in 19 cities during the 2013-2014 school year. They employed 400 coaches, including 187 AmeriCorps coaches. For the evaluation, the organizations collected baseline and follow-up (endline) surveys assessing the outcomes of interest. In addition to the survey data, Up2Us recorded participant demographic data and program data. The participant data included grade, ethnicity, and sex. Program data included the youth's coach, sport, location of the program, number of sessions offered, and number of sessions attended by each youth.

### Physical Activity

Physical activity was measured by the Physical Activity Questionnaire (PAQ), including the PAQ-C (tailored to grades 4 through 8) and PAQ-A (grades 9 through 12). The PAQ was designed to measure moderate to vigorous physical activity levels for youth from grades 4 through 12 during the school year. Researchers developed it “in response to the need for a valid and feasible self-report measure for large-scale (physical activity) research with children and adolescents” (Kowalski, et al., 2004).

A youth's PAQ score is tallied by first finding an activity score between 1 and 5 for each survey item (excluding the final item, which asks if the youth was sick or if anything prevented the youth from engaging in normal physical activities over the previous week). Item one asks whether a youth participated in specific activities during their spare time as well as the amount of times the youth participated in that activity; the mean of all activities in this item is calculated to find an individual activity score. Item eight is similarly structured; it asks how often the youth engaged in physical activity for each day of the last week, and the mean of these responses is calculated to find an individual activity score. After creating these two summary scores, the mean across all items (items one, eight, and two through seven) is calculated to find an overall activity score. (The final question does not factor into the final score, but is used instead to identify youth who engaged in unusual activity).

Up2Us adopted most questions from the original PAQ items, but modified them by removing a PAQ question inquiring about which sports youth had participated in and how often youth had participated in these sports over the previous week.

The original items in the questionnaire included questions soliciting physical activity done in the participant's spare time, physical activity done in different settings over the previous seven days (e.g. during physical education classes/recess, at lunch, right after school, evenings, etc.), a question seeking the level of physical effort exerted during a participant's free time over the previous seven days, how often the participant was physically active for each day last week, and whether or not the participant was sick in the last week or was prevented from participating in normal physical activity.

We followed the developer's instructions for scoring the instrument (see Appendix A); however, since Up2Us modified the original PAQ and removed the first item inquiring about youth's physical activity in their spare time, this item was not calculated into the overall activity score. The score is reported on a continuous scale ranging from 1 to 5, with high scores indicating higher levels of physical activity.

### **Nutrition**

Questions about nutritional intake came from the Physical Health & Nutrition Module of the California Healthy Kids Survey (California Dept. of Education, 2013). This measure asks how many times the respondents consumed the following items over the previous 24 hours:

- Milk or yogurt
- Soda pop
- 100 percent fruit juices, such as orange, apple, or grape
- French fries, potato chips, or other fried potatoes
- Fruit
- Vegetables

Response options included: 0 times (scored 1), 1 time (scored 2), 2 times (scored 3), 3 times (scored 4), and 4 or more times (scored 5). Each nutrition item was scored as an individual outcome and reflected the mean frequency ranging from 1 to 5.

Two additional questions about nutritional choices included:

When I have to make a decision about what to eat or drink...

- I know the difference between what is healthy for me and what is not healthy
- I usually choose the healthier option

These items were rated on a 1 to 5 scale from strongly agree to strongly disagree. They were coded so that a higher score indicated a better nutritional choice.

### **High Impact Attributes**

The High Impact Attributes (HIA) survey questionnaire was developed to measure the extent to which participants have a set of attributes shown to help them in sports as well as in life. The eight attributes include:

1. Positive identity

2. Situational awareness
3. Plan B thinking
4. Future focus
5. Discipline
6. Social confidence
7. Prosocial connections
8. Self-awareness

Each attribute was measured using two survey items. Per the scoring instructions, the two items were averaged to produce a score ranging from 1 to 5 for each attribute with higher scores indicating a higher amount of the attribute.

Additionally, the instrument included five questions measuring general decision-making ability. The items included the following:

1. I can resist peer pressure.
2. When I have to make a hard decision in life, I make the decision before thinking about all of the options.
3. When I have to make a hard decision in life, I talk to someone I trust about the decision.
4. When I have to make a hard decision in life, I feel helpless.
5. When I have to make a hard decision in life, I make the decision based on what will make other people like me.

Each item was rated on a 1 to 5 scale from strongly agree to strongly disagree. We treated each decision-making item as a separate outcome scored based on the mean agreement rating with high scores indicating better decision-making skill. The HIA measure, including the decision-making questions and scoring instructions can be found in Appendix B.

### **Program Dosage**

We used program data on the number of sessions provided by the programs and the number of sessions attended by youth to differentiate high- versus low-intensity<sup>1</sup> programming, and high versus low attendance. Both are indicators of dose. Intensity (number of sessions offered) reflects the intended or planned program intensity. Attendance reflects the actual achieved dose.

Number of sessions offered reflects an intent-to-treat (ITT) approach because it estimates the effects on everyone the program “intended to treat”. Whereas, the total number of classes attended is an “effects on the treated” approach. ITT is more rigorous and scientifically justified. However, the effect on the treated often is of greater interest to programs.

For the primary dosage analysis, we used the intensity variable and those results are reported in the body of the report. Another practical limitation of using the attendance variable was that

---

<sup>1</sup> We explored using dates of baseline and endline survey administration to construct a variable indicating the length of time of the program. However, there was too much missing data to create a program length variable.

there was substantial missing data. However, because of the potential interest by program administrators, we report the attendance results in Appendix C.

We examined the frequency distributions of the intensity and attendance variables to determine how to best categorize intensity and attendance. Intensity ranged from 1 to 128 sessions with a mean of 39 and a median of 34. We defined low intensity as 33 or fewer sessions and high intensity as 34 or greater sessions. Attendance ranged from 0 to 113 sessions with a mean of 26 and a median of 21. We defined low attendance as attending 21 or fewer sessions and high attendance as 22 or more sessions. Intensity and attendance data by CAA program are reported in Appendix D.

## **Sample and Follow-up**

Up2Us received evaluation data from 80 youth sports programs, collecting data from between 11 and 579 youth participants per program. The majority of programs provided data on fewer than 100 youth; the median was 44.

Completed baseline survey data were collected from 4,771 youth and endline survey data were collected from 2,299 youth. Of the 80 programs, 57 provided both baseline and endline surveys from some portion of their participants. While the remaining 23 of these programs failed to provide endline data, another program did not provide either baseline or endline data, and two others failed to provide baseline data but did submit endline data. Survey response rates for each program are reported in Appendix E.

Given the availability of baseline and/or endline survey data, we provide descriptive statistics for all participants (Table 1). Up2Us provided at least some demographic data on 5,797 (92.2 percent) participants (Table 1). Participants spanned all grade levels from Kindergarten through 12th grade, youth from 11 different racial or ethnic backgrounds, and a mix of new and veteran participants. Programs were instructed to exclude youth younger than age eight, however, there are a small number youth in this age range represented. Of the sample where data were provided:

- The sample was nearly evenly split among boys (50.6 percent) and girls (49.4 percent).
- The majority were enrolled in grades 3-8 (76.7%). Broken down by school level, nearly 60% were enrolled in middle or high school, with the remaining youth in elementary school.
- 78.1% identified themselves as either Hispanic or African-American.

**Table 1: Sample Descriptive Characteristics, n=6,288**

<b>Grade</b>	<b>n</b>	<b>%</b>
Kindergarten	5	0.1
1 <sup>st</sup>	124	2.0
2 <sup>nd</sup>	244	3.9
3 <sup>rd</sup>	701	11.1
4 <sup>th</sup>	851	13.5
5 <sup>th</sup>	715	11.4
6 <sup>th</sup>	698	11.1
7 <sup>th</sup>	652	10.4
8 <sup>th</sup>	638	10.1
9 <sup>th</sup>	289	4.6
10 <sup>th</sup>	238	3.8
11 <sup>th</sup>	209	3.3
12 <sup>th</sup>	185	2.9
Not disclosed	739	11.8
<b>Race/ethnicity</b>	<b>n</b>	<b>%</b>
Caucasian	421	6.7
African American	1577	25.1
Native American	24	0.4
Asian American	111	1.8
Hispanic	1850	29.4
Other	64	1.0
Asian	170	2.7
African	63	1.0
Multi-ethnic	76	1.2
Pacific Islander	3	0.0
Middle Eastern	27	0.4
Not disclosed	1902	30.2

<b>Sex</b>	<b>n</b>	<b>%</b>
Male	2936	46.7
Female	2861	45.5
Not disclosed	491	7.8
<b>Length of enrollment</b>	<b>n</b>	<b>%</b>
New participant	1091	17.4
1 year or less	1088	17.3
1-2 years	926	14.7
2-4 years	743	11.8
5 or more years	158	2.5
Not disclosed	2282	36.3
<b>Location</b>	<b>n</b>	<b>%</b>
New York	536	8.5
Chicago	942	15
Los Angeles	551	8.8
New Orleans	695	11.1
Miami	502	8
Boston	655	10.4
DC/Baltimore	306	4.9
Denver/Mountain Region	808	12.8
Bay Area CA	248	3.9
Flint/Mil./Cleve./Det.	234	3.7
Philadelphia	334	5.3
New Mexico	11	0.2
Dallas	92	1.5
Atlanta	113	1.8
Seattle	261	4.2

For the outcome analyses, we excluded programs that did not provide baseline or endline data (23 programs), defining the analysis sample as programs providing both baseline and endline data (57 programs). Of the 57 programs with baseline and endline data, response rates across programs varied from 4.8 to 100 percent. Overall, 39 of the 57 programs secured fewer than 50 percent on both data points.

We conducted a response bias analysis by comparing completers versus non-completers on baseline demographic and outcome variables (Tables 2 and 3). Collection of the surveys was more dependent on the level of effort put forth by the programs, as opposed to the individual youth; nonetheless it is important to understand who was represented in the followed sample. In addition, non-response is a combined function of attrition from the program and failure to complete the endline survey; however, it is not possible to know whether this was the case (i.e.: was the lack of endline data the result of attrition and therefore also of non-participation in the survey, or simply non-participation/non-completion of the survey?).

Table 2 presents the results of the response bias comparisons based on youth demographic characteristics. High school students were significantly less represented in the endline surveys than elementary and middle school students ( $p=.001$ ). Caucasian and Hispanic youth were significantly more likely to complete surveys compared to other racial and ethnic groups ( $p<.001$ ).

There also were differences in completers versus non-completers in some, but not all, of the outcome variables measured at baseline (Table 3). Non-completers had higher physical activity levels ( $p<.001$ ). Their higher levels likely relate to the higher inclusion of elementary school students, who had higher baseline rates of physical activity than the middle and high school youth. This circumstance is preferred to having higher non-response by youth with lower activity levels because it is more important to have lower activity youth represented in the outcome analyses. Youth with lower levels on the Discipline attribute were significantly less likely to complete the endline survey ( $p<.001$ ). The discipline items include, “I have a hard time waiting when I want something” and “If I’m feeling mad, it is hard to control what I say or do.” It is unclear if this distinction reflects impulsivity and true differences in proclivity to complete either the survey or to complete the sports program, but it is worth monitoring both program participation and survey completion to see if this attribute is related to participation.

**Table 2: Demographic comparisons between youth with endline data and youth without endline data, analysis sample**

	Completed endline n=2299		Did not complete endline n=2472		p value
	N	%	n	%	
<b>Grade</b>					0.001
Elementary (K-5 <sup>th</sup> )	975	42.4%	1080	43.7%	
Middle (6 <sup>th</sup> -8 <sup>th</sup> )	768	33.4%	906	36.7%	
High school (9 <sup>th</sup> -12 <sup>th</sup> )	556	24.2%	486	19.7%	
<b>Sex</b>					0.085
Male	1048	45.6%	1254	50.7%	
Female	1009	43.9%	1088	44.0%	
Not Disclosed	242	10.5%	130	5.3%	
<b>Race/ethnicity</b>					<.001
Caucasian	233	10.1%	125	5.1%	
African American	427	18.6%	682	27.6%	
Native North American	12	.5%	10	.4%	
Asian American	31	1.3%	45	1.8%	
Hispanic	799	34.8%	689	27.9%	
Other	32	1.4%	26	1.1%	
Asian	28	1.2%	54	2.2%	
African	24	1.0%	29	1.2%	
Multi-ethnic	37	1.6%	25	1.0%	
Pacific Islander	0	0.0%	3	.1%	
Middle Eastern	7	.3%	19	.8%	
Not Disclosed	669	29.1%	765	30.9%	

**Table 3: Comparisons on the outcomes, between youth with endline data and youth without endline data.**

	Completed endline		Did not complete endline		p value
	n	mean	n	mean	
<b>Physical Activity - PAQ Score</b>	1702	3.11	1633	3.21	<0.001
<b>Nutrition</b>					
In the past 24 hours, how many times did you...					
drink white milk?	309	2.85	133	2.81	0.928
drink soda?	309	2.18	133	2.24	0.703
drink 100% fruit juice?	309	2.85	133	2.92	0.645
eat French fries, potato chips, other fried potatoes?	306	2.38	132	2.42	0.767
eat fruit?	289	3.18	116	3.23	0.756
eat vegetables?	293	2.75	116	2.75	0.987
<b>High Impact Attributes</b>					
Positive Identity	1617	4.36	1577	4.34	0.442
Situational Awareness	1613	3.37	1578	3.34	0.341
Plan B Thinking	1639	3.69	1589	3.69	0.911
Future Focus	1636	4.13	1583	4.08	0.108
Discipline	1635	2.90	1588	2.80	<0.001
Social Confidence	1636	3.54	1583	3.50	0.238
Prosocial connections	1637	3.65	1579	3.59	0.057
Self Awareness	1636	3.71	1578	3.67	0.201
<b>Decision-making</b>					
I can resist peer pressure.	724	3.66	428	3.65	0.890
When I have to make a hard decision in life...					
I make the decision before thinking about all of the options.	1593	2.95	1528	2.88	0.159
I talk with someone I trust about the decision.	1587	3.86	1535	3.81	0.315
I feel helpless.	1590	3.21	1526	3.16	0.251
I make the decision based on what will make other people like me.	1591	3.20	1530	3.13	0.127



## Data Analysis

The data were provided by Up2Us to AIR in a Microsoft Excel spreadsheet and prepared for analysis. AIR merged the demographic and program data with the survey data, conducted quality checks to address errors in data entry and missing data prior to analysis, and ran preliminary descriptive analyses to determine how to best define and code the analysis variables. Detailed data cleaning and preparation steps are provided in Appendix F.

We conducted a two-stage analysis to:

- 1) Estimate the pre-post change in outcomes across the study population, and
- 2) Estimate the difference in pre-post change for youth participating in a low intensity versus high intensity program.

For the Stage One analysis, we used an observational one-group, pretest–posttest design to examine changes in outcomes between baseline and completion of the program. Specifically, we constructed a mixed-effect regression model to estimate change in outcomes from pretest to posttest. Using Maximum Likelihood estimation, we obtained regression coefficients adjusted for the missing values based on the assumption that the data were missing at random. The parameter estimates from the Maximum Likelihood estimation are similar to those obtained using multiple imputations. The former, however, is more efficient because adjusted regression coefficients and standard errors can be obtained without generating multiple complete data sets with imputed post-test scores. The models will account for potential correlations among participants resulting from both repeated measures on the same participant and from potential correlations between participants of the same program.

For the Stage Two analysis, we expanded the Stage One model to examine the change in outcomes for youth participating in high versus low intensity programs. In preliminary analyses, we looked at each outcome stratified by the two intensity categories (low versus high). Secondly, we looked at the interaction between time (pre-to-post) and each intensity category (i.e. time\*intensity) to test for an interactive effect. The interaction effect determines whether the change in the pre-post scores is significantly different for youth participating in high versus low programs.

All the regression models adjusted for the potential effects of sex, race/ethnicity, and grade. In the analyses, grade was collapsed into: elementary school (grades K through 5), middle school (grades 6 through 8), and high school (grades 9 through 12).

In addition to comparing the results by program intensity, we conducted additional descriptive analyses to assess differences in program effects by variables of secondary interest to Up2Us: attendance, grade (elementary school versus middle and high school combined, and sex. Because these were of secondary interest, they are reported in tabular form in Appendix C, G, and H.

## Results

### Overall

#### Physical Activity

Overall, youth significantly increased their level of physical activity from a mean of 3.11 at baseline to 3.21 at endline ( $p < .001$ ).

#### Nutrition

Changes in the nutrition outcomes from baseline to endline were mixed. There was significant improvement on two of the six nutrition frequency items: youth reported drinking less soda ( $p=.03$ ) and eating fewer French fries, potato chips, and other fried potato ( $p<.001$ ). However, they also significantly reduced the amount of 100 percent fruit juice they reported drinking ( $p=.004$ ). There was no overall impact on drinking milk or eating fruit or vegetables. There were no differences on the healthy choices questions.

#### High Impact Attributes.

There was a significant effect on two of the eight attributes: Plan B thinking ( $p=.008$ ) and Prosocial connections ( $p.001$ ). Additionally, there was significant improvement in three of the five decision-making items: feeling helpless when having to make a hard decision ( $p=.003$ ), making decisions based on what will make others like me ( $p=.005$ ), and resisting peer pressure ( $p=.001$ ).

See Table 4 for a summary of the overall results for each outcome measured.

**Table 4. Model estimated baseline and endline means for each outcome**

	n*	Predicted Baseline mean	Predicted Endline mean	p value
<b>Physical Activity</b> - PAQ Score	2599	3.11	3.21	<.001
<b>Nutrition*</b>				
In the past 24 hours, how many times did you...				
drink white milk?	1133	2.80	2.82	.768
drink soda?	1128	2.20	2.04	.033
drink 100% fruit juice?	1133	2.88	2.63	.004
eat French fries, potato chips, other fried potatoes?	1125	2.45	2.12	<.001
eat fruit?	1106	3.15	3.24	.304
eat vegetables?	1116	2.82	2.72	.227
When I have to make a decision about what to eat or drink...				
I know the difference between what is healthy for me and what is not healthy	2571	3.99	4.06	.238
I usually choose the healthier option	2560	3.47	3.47	.998
<b>High Impact Attributes</b>				
Positive Identity	2512	4.35	4.37	.550
Situational Awareness	2514	3.34	3.38	.094
Plan B thinking	2525	3.69	3.75	.008
Future Focus	2522	4.12	4.14	.433
Discipline	2521	2.87	2.92	.052
Social Confidence	2518	3.53	3.56	.209
Prosocial connections		3.63	3.71	.001
Self-Awareness	2517	3.70	3.71	.873
<b>Decision-making</b>				
I can resist peer pressure*	1572	3.55	3.71	.001
When I have to make a hard decision in life...				
I make the decision before thinking about all of the options.	2488	2.94	2.99	.185
I talk with someone I trust about the decision.	2485	3.84	3.84	.951
I feel helpless.	2486	3.21	3.32	.003
I make the decision based on what will make other people like me.	2485	3.20	3.30	.005

\*The overall sample size for these analyses was 2,599. However, the nutrition questions and the decision-making item “I can resist peer pressure” were not included on all survey versions. For the other outcomes, the sample size is lower than 2,599 due to youth skipping some survey items.

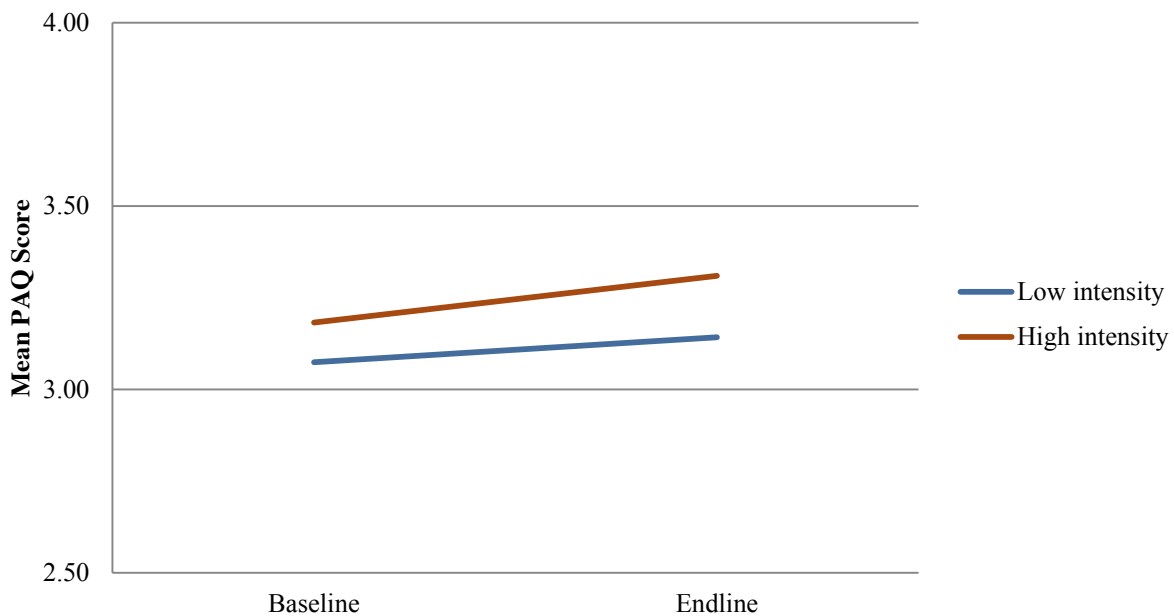
## High Intensity versus Low Intensity Programming

Next the results for the dosage analyses are presented. We highlight outcomes where there were differences in effects for youth in high- versus low-intensity programs. The complete results for the intensity comparison are reported in Appendix I.

### Physical Activity

Youth in both high and low intensity programs achieved significant increases in physical activity. Notably, youth in high intensity programs started off at a higher level of physical activity and saw a steeper increase. This may reflect selection differences between the groups, i.e., more active youth selecting higher intensity programs. However, it also is important to monitor data collection to be sure there are not systematic differences in data collection procedures, e.g., baseline data collection being delayed until after the start of the program when activity levels have increased.

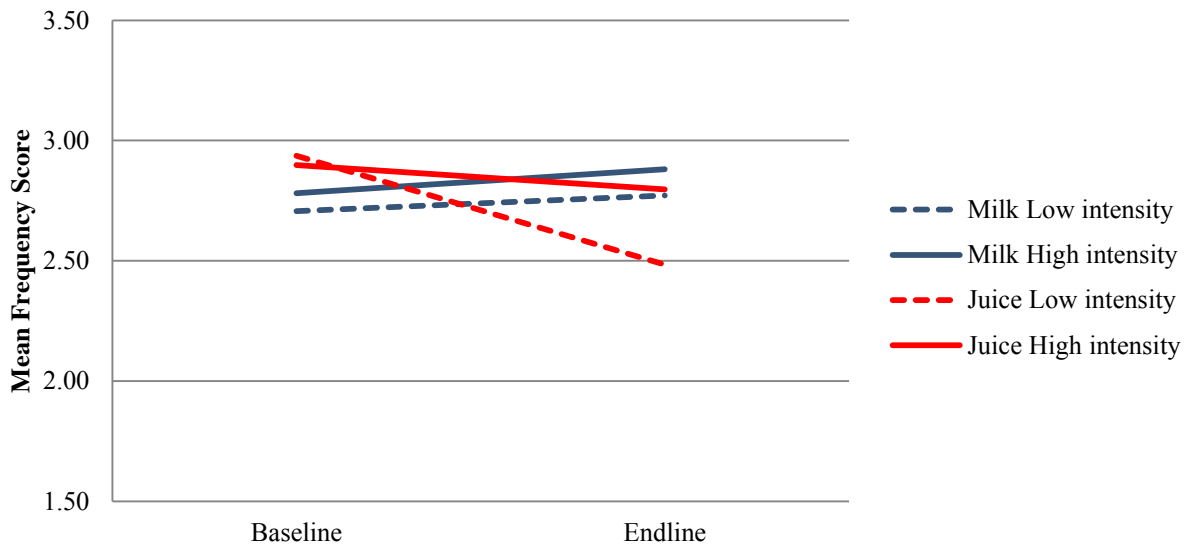
**Figure 1. Mean Physical Activity Questionnaire (PAQ) scores at baseline and endline for youth participating in high versus low intensity programs**



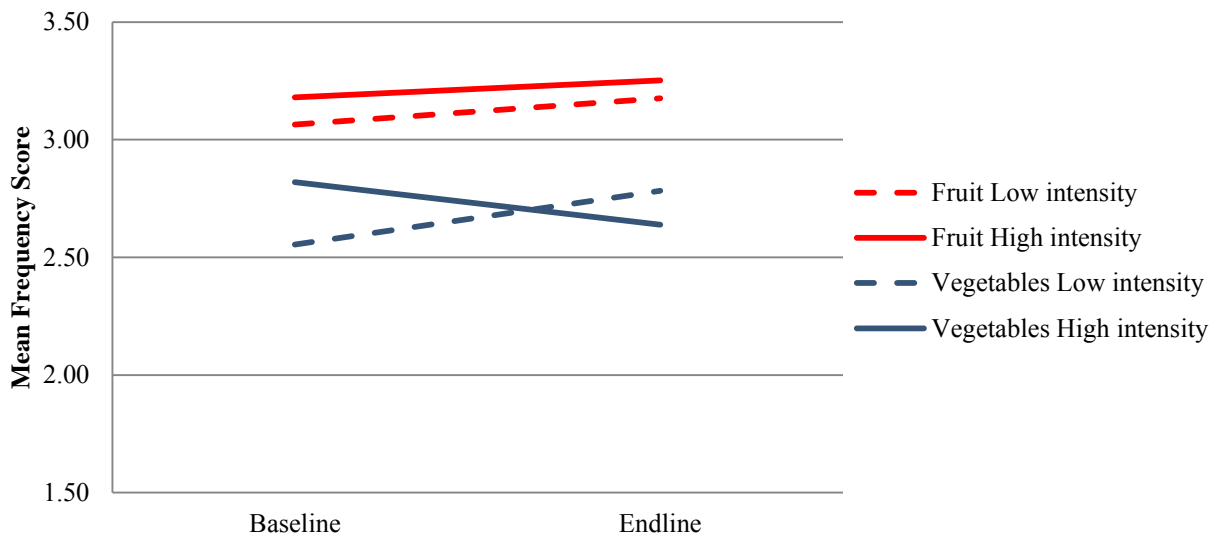
## Nutrition

The dosage analysis revealed different patterns of effects for low- versus high-intensity programs. The effect on consumption of fried potato products was significant in both groups. Reduced soda consumption, however, was observed only in the low intensity group. The high intensity group saw a small but statistically significant effect on consumption of vegetables ( $p=.04$ ). Additionally, the decrease in consumption of 100 percent fruit juices was only observed in the low intensity group. There was no change in frequency of drinking 100 percent fruit juices in the high intensity group.

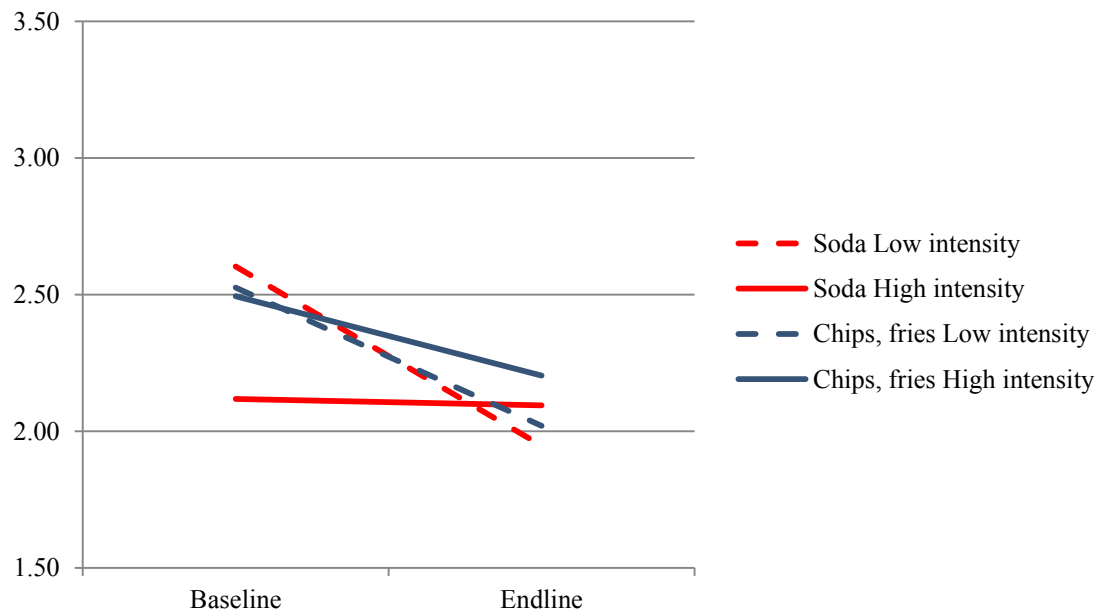
**Figure 2. Mean scores on milk and juice consumption, for youth participating in high versus low intensity programs**



**Figure 3. Mean scores on fruit and vegetable consumption, for youth participating in high versus low intensity programs**



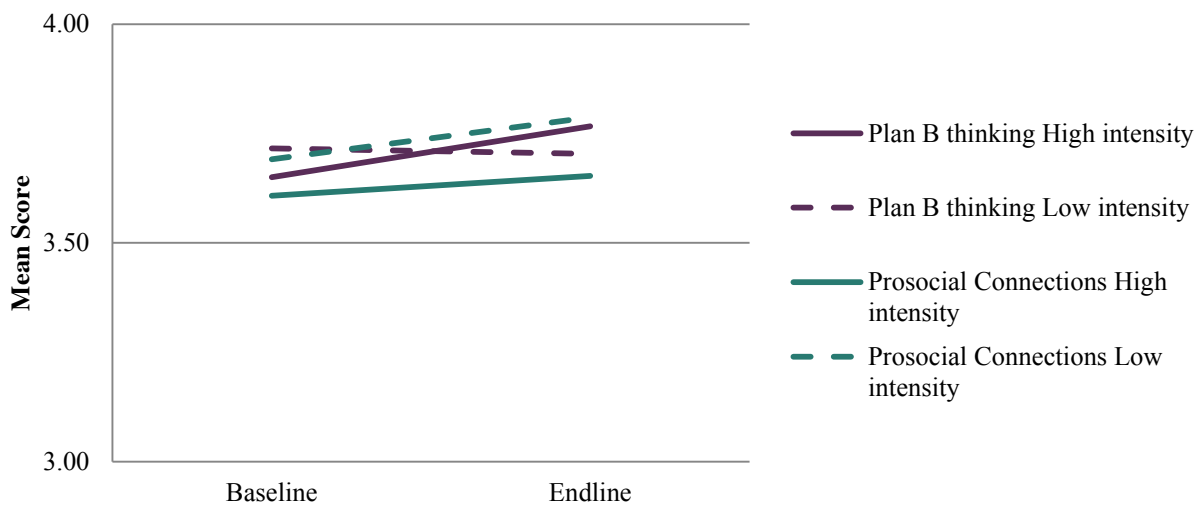
**Figure 4. Mean scores on soda and fried potatoes consumption, for youth participating in high versus low intensity programs**



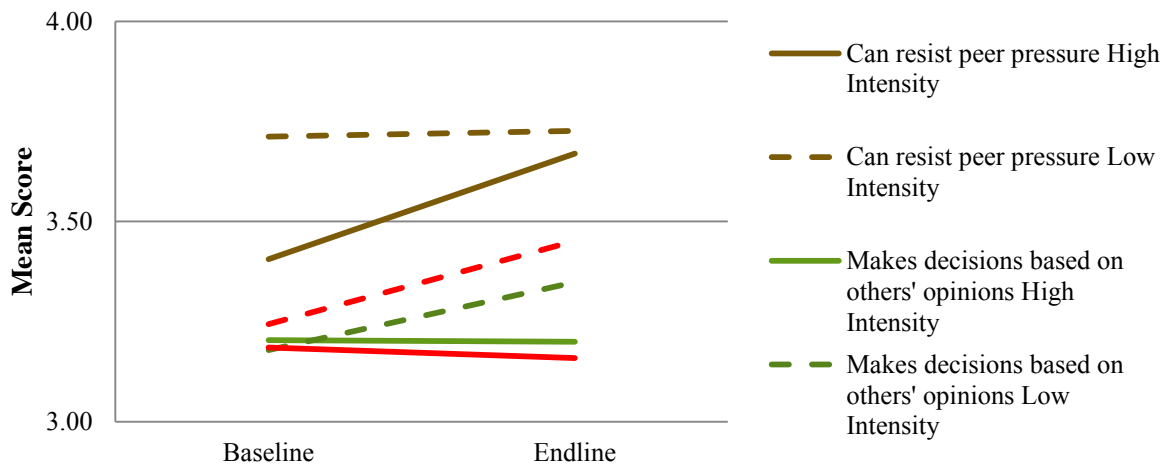
## High Impact Attributes

The dosage analyses also revealed patterns of differences in the HIA outcomes. In the overall analyses, we reported significant effects on Plan B thinking, Prosocial connections and three decision-making items. However, the dosage analyses showed that youth in high intensity programs had significant changes on just Plan B thinking ( $p=.001$ ) and ability to resist peer pressure ( $p<.001$ ). Low intensity programs, however, had significant effects on Prosocial connections ( $p=.01$ ) and two decision-making items: feeling helpless when having to make a hard decision ( $p<.001$ ) and making decisions based on what will make others like me ( $p<.001$ ). These differences in patterns are illustrated in Figures 5 and 6.

**Figure 5. Mean scores on HIA outcomes, for youth participating in high versus low intensity programs**



**Figure 6. Mean scores on decision-making outcomes, for youth participating in high versus low intensity programs**



## Conclusions

Results revealed that youth who interacted with CAA coaches during the 2013-2014 school year increased their physical activity, and decreased their consumption of unhealthy items including soda and fried potatoes. CAA's overall impact on youth nutritional habits was mixed, however, because youth also reported a decline in 100 percent fruit juice consumption and insignificant results concerning changes in other nutritional habits.

Interacting with a CAA coach correlated with youth's enhanced manifestation of the HIAs labeled Prosocial connections and Plan B thinking, and the youth also reported improvements in their answers to three of the five decision-making questions. Mixed findings concerning changes in other HIA outcomes, however, lead us to conclude that more research is needed to determine an illuminating, detailed CAA impact on youth development.

### Physical Activity

The improvements in short-term physical activity (PA) manifested by youth in this study correspond with recent studies concluding that sports participation can positively impact youth physical activity levels in the short term, including disadvantaged youth within organized sports programs such as those that worked with CAA coaches in this study (Vella, et. al., 2013b; Mandic, et. al., 2012).

The larger PAQ increases, reported in particular by middle school youth in this evaluation, and insignificant results from the elementary-school cohort also are validated by results and conclusions from a recent study. Basterfield, et. al. (in press) found that middle school-aged youth increasing PA levels correlated with participating on a sport club. "This provides some evidence that sports club participation is the source of increased physical activity," wrote the authors, who examined English youth born in 1999 or 2000 three times between 2006 and 2012. Elementary school-aged youth who participated on these clubs, by contrast, did not exhibit higher levels of PA. The authors thus concluded that sports participation may be more influential as youth age: "Sports participation may become an increasingly significant source of physical activity over late childhood and early adolescence when physical activity is likely to decline dramatically and rates of obesity incidence are highest" (p. 4).

Other recent studies of organized sports have concluded that coaches are especially influential because of the extent and variety of means they can assist youth, including enhancing youth's physical activity levels up to recommended guidelines (Fenton, et. al., 2014; Gould, et. al., 2012; Camire, et. al., 2011; Blom & Watson, 2010). Considering this evidence, the statistically significant PAQ increases revealed in this CAA evaluation—while not isolating for coaching impact—suggest that CAA coaches were at least partly responsible for inducing the youth in this study to be more physically active on a regular basis.

### Nutrition

Mixed findings in this evaluation on the impact of sports participation on nutrition and diet are consistent with recent research. Nelson, et al. (2011) reviewed 19 studies comparing weight



status, physical activity and diet of sports participants versus nonparticipants; they did not find any clear pattern or association between body weight and sports participation—even though 17 of these studies revealed sports participants are more physically active. “The existing research suggests that youth in sports are more likely to consume greater amounts of calories and consume some unhealthy foods and beverages,” the authors concluded. “It is unclear whether the higher energy expenditure associated with sport compensates adequately for this additional energy intake” (p. 369).

Vella, et al. (2013b) failed to find associations between organized sport participation and consumption of high-fat foods or sugar-sweetened beverages when they surveyed 12,000 Australian youth ages 12 and 17. Nelson, et. al., echoed the Vella research team in concluding: “Whether youth sport participation predicts future dietary intake is understudied” (p. 368).

It fits, then, that the results from this CAA study concerning sports participation, nutrition and diet are not conclusive. (One potential solution, suggested by Vella, et. al., is to revamp quantitative instruments designed to measure these relationships. “The consumption of high-fat foods and sugar-sweetened beverages may be so pervasive in the population,” the authors noted, “that measures of organized sports participation are unable to differentiate between those who do and do not consume these unhealthy options on a regular basis” [p. 119].)

### **High Impact Attributes**

The statistically significant results revealed by this CAA evaluation concerning Plan B Thinking, Prosocial connections and general decision-making reflect research concluding that coaches are influential in aiding youth development, particularly for underserved youth. Gould, et. al. (2012) surveyed 239 urban youth sports participants from an underserved community; they found that the more coaches cultivate caring, mastery-oriented environments, the more likely they are to yield positive developmental gains for their young athletes. These results, the authors wrote, supported previous research “showing that coaching actions and behaviors have an important influence on personal and social development of young people involved in sport in general and in underserved populations in particular” (p. 85).

In addition, MacDonald et al. (2010) found that athletes who played for coaches who received training through their sport program—which, of course, CAA coaches are expected to do—reported higher rates of personal and social skills than athletes who played for untrained coaches. The researchers split up youth participants ages 9-17 into one group (n=41) coached by the trained coaches and a group (n=68) coached by the untrained coaches, surveyed both groups, and found that “youth experiences can be influenced by informal coach training...Any training may be better than no training in developing positive skills in youth.” The authors concluded that “incorporating discussion about positive development into a program could have significant effects on a large number of youth” (p. 371).

More specifically, Blom and Watson (2010) found significant results for the interaction between caring coaching behaviors and athlete self-confidence over time. The researchers divided their youth sample into three groups, including a group led by coaches who received formal training from a professionally sanctioned trainer-coach. These youth reported feelings of improved self confidence in comparison to the other two groups.

More recently, however, Langan, et al. (2013) systematically reviewed and evaluated research into the effectiveness of coach education interventions more broadly; they concluded that, “due to the diversity in athlete outcomes and intervention design, it is difficult to draw firm conclusions around the effectiveness of coach education interventions” (p. 37). The researchers examined four coaching studies, finding mixed effects on athlete developmental outcomes including anxiety, self-esteem, fear of failure, and motivational orientation.

Despite the findings divulged by MacDonald, et al. (2010), Blom and Watson (2010) and by this CAA evaluation, then, researchers and practitioners should consider this recommendation from the Langan research team (2013) before drawing any ironclad conclusions about trained coaches’ impacts on youth development: “More research is needed to further our understanding of (coach education) intervention effectiveness to allow for growth and improvement in coach education” (p. 37).

Meeting this request from the Langan team would also satisfy a challenge from another research team. After Flett, et al. (2012) conducted 66 observations of inner-city baseball and softball practices and games, across Under-18, Under-14 and Under-12 groups, they ultimately concluded: “This observation study has detailed how difficult it is to conduct research in underserved competitive sport programs. However, these are the contexts that sport science researchers can make a positive contribution to social well-being (sic). It is our challenge as a field to improve the lives of youth using sport as a vehicle” (p. 288).

## References

- Basterfield, L., Reilly, J.K., Pearce, M.S., Parkinson, K.N., Adamson, A.J., Reilly, J.J., Vella, S.A. (in press). Longitudinal associations between sports participation, body composition and physical activity from childhood to adolescence. *Journal of Science and Medicine in Sport*.
- Beatty, G., & Fawver, B. (2013). What is the status of youth coach training in the U.S.? *Sport Policy & Research Collaborative*. Retrieved from <http://www.aspeninstitute.org>.
- Berlin, R. A., Dworkin, A., Eames, N., Menconi, A., & Perkins, D. F. (2007). Examples of sports based youth development programs. *New Directions for Youth Development*, (115), 85-106.
- Blom, L.C., Watson, J.C. (2010). The Impact of a Coaching Intervention on the Coach-Athlete Dyad and Athlete Sport Experience. *Athletic Insight*, 12(3).
- Bohnert, A.M. & Ward, A.K. (2013). Making a difference: Evaluating the Girls in the Game (GIG) after-school program. *Journal of Early Adolescence*, 33(1), 104-130.
- Bornstein, D. (2011, October 20). The Power of Positive Coaching. *New York Times Opinionator*. Retrieved from [www.nytimes.com](http://www.nytimes.com).
- California Dept. of Education (2013). California Healthy Kids Survey: Version H18. <http://chks.wested.org>.
- Camire, M., Forneris, T., Trudel, P., Bernard, D. (2011). Strategies for helping coaches facilitate positive youth development through sport. *Journal of Sport Psychology in Action*, 2: 92-99.
- Centers for Disease Control and Prevention (n.d., a). *The Obesity Epidemic and United States Students*. Retrieved from [http://www.cdc.gov/healthyyouth/yrbs/pdf/us\\_obesity\\_combo.pdf](http://www.cdc.gov/healthyyouth/yrbs/pdf/us_obesity_combo.pdf).
- Centers for Disease Control and Prevention (n.d., b). *Youth Risk Behavior Surveillance System: Overview*. Retrieved from <http://www.cdc.gov/healthyyouth/yrbs/index.htm>.
- Fenton, S.A.M., Duda, J.L., Quested, E., Barrett, T. (2014). Coach autonomy support predicts autonomous motivation and daily moderate-to-vigorous physical activity and sedentary time in youth sport participants. *Psychology of Sport and Exercise*, 15, 453-463.
- Flett, M.R., Gould, D., Lauer, L. (2012). A study of an underserved youth sports program using the Youth Program Quality Assessment. *Journal of Applied Sport Psychology*, 24: 275-289.
- Gould, D., Flett, R., Lauer, L. (2012). The relationship between psychosocial development and the sports climate experienced by underserved youth. *Psychology of Sport and Exercise*, 13, 80-87.

Kowalski, K.C., Crocker, P.R.E., Donen, R.M. (2004). The Physical Activity Questionnaire for Older Children (PAQ-C) and Adolescents (PAQ-A) Manual. College of Kinesiology, University of Saskatchewan.

Langan, E., Blake, C., Lonsdale, C. (2013). Systematic review of the effectiveness of interpersonal coach education interventions on athlete outcomes. *Psychology of Sport and Exercise, 14*, 37-49.

Le Menestrel, S., & Perkins, D.F. (2007). An overview of how sports, out-of-school-time, and youth well-being can and do intersect. *New Directions for Youth Development, 115*, 13-25.

MacDonald, D.J., Cote, J., Deakin, J. (2010). The impact of informal coach training on the personal development of youth sport athletes, *International Journal of Sports Science & Coaching, 5*(3), 363-372.

Mandic, S., Bengoechea, E.G., Stevens, E., de la Barra, S.L., Skidmore, P. (2012). Getting kids active by participating in sport and doing it more often: focusing on what matters. *International Journal of Behavioral Nutrition and Physical Activity, 9*, 86.

Nelson, T.F., Stovitz, S., Thomas, M., La Voi, N.M., Bauer, K.W., Neumark-Sztainer, D. (2011). Do youth sports prevent pediatric obesity? A systematic review and commentary. *Current Sports Medicine Reports, 10*(6), 360-370.

Rausch, K. (2006). Pay-to-play: a risky and largely unregulated solution to save high school athletic programs from elimination. *Suffolk Law Review, 39* (2), 583-611.

Rosewater, A. (2010). *Organized Sports and the Health of Children and Youth*. Oakland, CA: Team Up for Youth.

Singh, G. K., Siahpush, M., & Kogan, M. D. (2010). Rising social inequalities in U.S. childhood obesity, 2003-2007. *Annals of Epidemiology, 20*(1), 40-52.

University of Chicago (2012). BAM-Sports Edition. Crime lab research and policy brief.

Up2Us. (n.d.). *CAA description*. Retrieved from <http://up2us.org>.

Up2Us. (n.d.). *Coach Across America introductory guide: hosting a coach*. Retrieved from <http://up2us.org>.

Vella, S.A., Oades, L.G., Crowe, T.P. (2013a). The relationship between coach leadership, the coach-athlete relationship, team success, and the positive developmental experiences of adolescent soccer players. *Physical Education and Sport Pedagogy, 18*(5), 549-561.

Vella, S.A., Cliff, D.P., Okely, A.D., Scully, M.L., Morley, B.C. (2013b). Associations between sports participation, adiposity and obesity-related health behaviors in Australian adolescents. *International Journal of Behavioral Nutrition and Physical Activity, 10*, 113.



# Appendices

## Appendix A. PAQ Scoring Instructions

### Physical Activity Questionnaire for Adolescents (PAQ-A)

The Physical Activity Questionnaire for Adolescents is a nine-item, seven day self-report recall questionnaire designed and extensively used for surveillance and monitoring. The PAQ-A is a self-administered. It was developed to assess general levels of physical activity for high schools students in grades 9 to 12 and approximately 14 to 19 years of age.

The PAQ-A can be administered in a classroom setting and provides a summary physical activity score derived from eight items (the 9th item does not factor into the overall score), each scored on a 5-point scale. Estimated completion time is 20 minutes.

#### Population

High School  
Administration Method

#### Self-Report Questionnaire

Number of Questions 9

Creator(s) of Tool

Kowalski, K., Crocker, P., & Donen, R. The Physical Activity Questionnaire for Older Children (PAQ-C) and Adolescents (PAQ-A) Manual. College of Kinesiology, University of Saskatchewan.

Kent C. Kowalski, Ph.D.  
College of Kinesiology  
University of Saskatchewan

Peter R. E. Crocker, Ph.D.  
School of Human Kinetics  
University of British Columbia

Rachel M. Donen, Bsc. Honours  
College of Kinesiology  
University of Saskatchewan

#### Scoring / Benchmarking

Overall process - Find an activity score between 1 and 5 for each item (excluding item 9)

#### 1) Item 1 Spare Time Activity

- Take the mean of all activities ("no" activity being a 1, "7 times or more" being a 5) on the activity checklist to form a composite score for item 1.

2) Item 2 to 7 (PE, lunch, right after school, evening, weekends, describes you best)

- The answers for each item start from the lowest activity response and progress to the highest activity response.
- Use the reported value that is checked off for each item (the lowest activity response being a 1 and the highest activity response being a 5).

### 3) Item 8

- Take the mean of all days of the week ("none" being a 1, "very often" being a 5) to form a composite score for item 8.

### 4) Item 9

- Can be used to identify students who had unusual activity during the previous week, but this question is NOT used as part of the summary activity score.

### 5) How to calculate the final PAQ-A activity score

- Once you have a value from 1 to 5 for each of the 8 items (items 1 to 8) used in the Physical Activity composite score, you simply take the mean of these 8 items, which results in the final PAQ-A activity summary score.

- A score of 1 indicates low physical activity, whereas a score of 5 indicates high physical activity.

#### Background / Quality

Consistently high validity; reliability is considered to be moderate.

(Richardson D, Cavill N, Ells L, Roberts K (2011) Measuring Diet and Physical Activity in Weight Management Interventions: A Briefing Paper. Oxford: National Obesity Observatory.)

Retrieved from: <http://www.performwell.org/index.php/find-surveyassessments/outcomes/health-a-safety/good-health-habits/physical-activity-questionnaire-for-adolescents>

## Physical Activity Questionnaire for Children (PAQ-C)

The Physical Activity Questionnaire for Children is a self-administered, 7-day recall instrument. It was developed to assess general levels of physical activity throughout the elementary school year for students in grades 4 to 8 and approximately 8 to 14 years of age. The PAQ-C can be administered in a classroom setting and provides a summary physical activity score derived from nine items, each scored on a 5-point scale. Estimated completion time is 20 minutes.

#### Scoring / Benchmarking

Overall process - Find an activity score between 1 and 5 for each item (excluding item 10)

### 1) Item 1 Spare Time Activity

- Take the mean of all activities ("no" activity being a 1, "7 times or more" being a 5) on the activity checklist to form a composite score for item 1.

### 2) Item 2 to 8 (PE, recess, lunch, right after school, evening, weekends, and describes you best)

- The answers for each item start from the lowest activity response and progress to the highest activity response.
- Use the reported value that is checked off for each item (the lowest activity response being a 1 and the highest activity response being a 5).

### 3) Item 9

- Take the mean of all days of the week ("none" being a 1, "very often" being a 5) to form a composite score for item 9.

### 4) Item 10

- Can be used to identify students who had unusual activity during the previous week, but this question is NOT used

as part of the summary activity score.

5) How to calculate the final PAQ-A activity score

- Once you have a value from 1 to 5 for each of the 9 items (items 1 to 9) used in the Physical Activity composite score, you simply take the mean of these 8 items, which results in the final PAQ-A activity summary score.

- A score of 1 indicates low physical activity, whereas a score of 5 indicates high physical activity.



## Appendix B. HIA Scoring Instructions

### HIA survey scoring instructions

The HIA survey questions are meant to measure the extent to which participants have a set of attributes that research shows will help them in sport and in life.

The following questions measure the following attributes:

Question	Attribute
1. I believe in myself.	Positive Identity
2. I get into bad situations without knowing it until it is too late.	Situational Awareness
3. I consider more than one option when trying to solve the problems I face in my life.	Plan B thinking
4. My future goals influence the decisions I make.	Future Focus
5. I have a hard time waiting when I want something.	Discipline
6. I am afraid to express my opinions to other people.	Social Confidence
7. The friends I spend time with make me a better person.	Prosocial connections
8. When I am having bad thoughts, I know how to change them to happier thoughts.	Self Awareness
9. There are a lot of good things about me.	Positive identity
10. When I walk into a room, I look around to see if anything is unsafe.	Situational Awareness
11. If something doesn't work out as I planned, I usually have a backup plan.	Plan B Thinking
12. If I am feeling mad, it is hard to control what I say or do.	Discipline
13. None of the adults in my life understand who I really am.	Pro Social connections
14. When I am in a bad mood, I can name the reason why.	Self Awareness
15. I know how to make plans to reach my goals.	Future Focus
16. If I see something happening that I think is wrong, I will speak up.	Social Confidence

These five questions are meant to measure general decision-making ability:

17. When I have to make a hard decision in life, I make the decision before thinking about all of the options.
18. When I have to make a hard decision in life, I talk to someone I trust about the decision.
19. When I have to make a hard decision in life, I feel helpless.
20. When I have to make a hard decision in life, I make the decision based on what will make other people like me.
21. I can resist peer pressure.

For some of the questions, “strongly agree” is an indicator of a higher amount of the attribute and for other questions, “strongly disagree” is an indicator of a higher amount of the attribute. In order to compare all of the questions to one another, we need to standardize the responses in a way that 1 is low for all questions and 5 is high for all questions.

**Instructions for data entry and analysis:**

1. When entering survey data, start by entering responses exactly how they are in the survey: 1 for strongly agree, 2 for agree, 3 for not sure, 4 for disagree, and 5 for strongly disagree.
2. Next, you will want to “flip” responses for the highlighted/bolded questions below so that all 1’s become 5’s, 2’s become 4’s, and so on:

<b>1. I believe in myself.</b>
2. I get into bad situations without knowing it until it is too late.
<b>3. I consider more than one option when trying to solve the problems I face in my life.</b>
<b>4. My future goals influence the decisions I make.</b>
5. I have a hard time waiting when I want something.
6. I am afraid to express my opinions to other people.
<b>7. The friends I spend time with make me a better person.</b>
<b>8. When I am having bad thoughts, I know how to change them to happier thoughts.</b>
<b>9. There are a lot of good things about me.</b>
<b>10. When I walk into a room, I look around to see if anything is unsafe.</b>
<b>11. If something doesn’t work out as I planned, I usually have a backup plan.</b>
12. If I am feeling mad, it is hard to control what I say or do.
13. None of the adults in my life understand who I really am.
<b>14. When I am in a bad mood, I can name the reason why.</b>
<b>15. I know how to make plans to reach my goals.</b>
<b>16. If I see something happening that I think is wrong, I will speak up.</b>
17. When I have to make a hard decision in life, I make the decision before thinking about all of the options.
<b>18. When I have to make a hard decision in life, I talk to someone I trust about the decision.</b>
19. When I have to make a hard decision in life, I feel helpless.
20. When I have to make a hard decision in life, I make the decision based on what will make other people like me.
<b>21. I can resist peer pressure.</b>

Doing this “flip” by hand is very time consuming and will probably result in errors, so the best way to do it is using the CHOOSE function in Excel. The following shows an example of the first 5 questions, with the original survey entry in purple and the appropriate questions flipped in green. Note for questions number 2 & 5 (red columns) the numbers were kept the same and for questions number 1, 3, and 4 the numbers were flipped using the formula =CHOOSE(cell#, 5,4,3,2,1) → cell# is a place holder for cell you want to flip (the original)

	A	B	C	D	E	F	G
1		1	2	3	4	5	
2	KID1	3	4	4	1	4	
3	KID2	4	2	2	5	5	
4	KID3	1	1	1	2	2	
5	KID4	4	4	5	4	4	
6	KID5	1	1	5	5	3	
7							
8							
9							
10							
11		1	2	3	4	5	
12	KID1	3	4	2	5	4	
13	KID2	2	2	4	1	5	
14	KID3	5	1	5	4	2	
15	KID4	2	4	1	2	4	
16	KID5	5	1	1	1	3	
17							

3. Once all of the questions have been standardized so that 5 indicates a high amount of the attribute and 1 indicates a low amount of the attribute (green in example above), pair the questions that measure the same attribute and average them for each participant:
  - Positive identity: #1 & #9
  - Situational awareness: #2 & #10
  - Plan B thinking: #3 & #11
  - Future focus: #4 & #15
  - Discipline: #5 & #12
  - Social confidence: #6 & #16
  - Prosocial connections: #7 & #13
  - Self awareness: #8 & #14

This will give you a score from 1-5 for each attribute for each participant, where 5 is high and 1 is low. You can also average each participant's overall decision-making score by averaging #17-21.

4. Next you can calculate things like:
  - Average participant score for each HIA
  - Average participant overall HIA score
  - Average participant decision-making score
  - Average participant total survey score
  - Percentage of participants who averaged 4 or above
  - Percentage of participants who averaged 2 or below
  - If survey is administered to same participants multiple times:
    - Change score for each HIA, overall HIA score, and decision-making score
    - Percentage of participants who improved, stayed the same, or decreased HIA score
  - MANY MORE!

## Appendix C. Program Outcomes by Youth Attendance

	LOW ATTENDANCE					HIGH ATTENDANCE				
	n	Predicted Baseline mean	Predicted Endline mean	Difference	p value	n	Predicted Baseline mean	Predicted Endline mean	Difference	p value
Physical Activity - PAQ Score	939	3.07	3.12	-.06	.086	1256	3.19	3.32	-0.13	<.001
<b>Nutrition</b>										
In the past 24 hours, how many times did you...										
drink white milk?	497	2.75	2.79	-.04	.800	566	2.81	2.89	-0.07	.423
drink soda?	495	2.22	1.95	.27	.066	563	2.19	2.07	0.12	.169
drink 100% fruit juice?	497	2.87	2.50	.37	.027	566	2.88	2.78	0.11	.295
eat French fries, potato chips, other fried potatoes?	493	2.33	2.00	.33	.021	564	2.51	2.18	0.33	<.001
eat fruit?	487	3.09	3.18	-.09	.611	550	3.20	3.29	-0.10	.316
eat vegetables?	493	2.68	2.81	-.13	.465	553	2.79	2.64	0.15	.098
When I have to make a decision about what to eat or drink...										
I know the difference between what is healthy for me and what is not healthy	704	4.05	4.01	.04	.679	853	3.99	4.11	0.12	.078
I usually choose the healthier option	704	3.53	3.44	.09	.412	855	3.50	3.55	-.05	.496
<b>High Impact Attributes</b>										
Positive Identity	917	4.40	4.39	.00	.898	1238	4.33	4.34	-0.02	.608
Situational Awareness	916	3.33	3.36	-.03	.409	1240	3.39	3.43	-0.04	.228
Plan B thinking	926	3.74	3.73	.01	.735	1242	3.65	3.75	-0.10	.003
Future Focus	924	4.16	4.10	.05	.142	1241	4.11	4.16	-0.05	.121
Discipline	923	2.92	3.00	-.08	.112	1241	2.88	2.90	-0.02	.649

	LOW ATTENDANCE					HIGH ATTENDANCE				
	n	Predicted Baseline mean	Predicted Endline mean	Difference	p value	n	Predicted Baseline mean	Predicted Endline mean	Difference	p value
Social Confidence	924	3.56	3.60	-.04	.260	1241	3.52	3.54	-0.01	.697
Prosocial connections	921	3.70	3.79	-.09	.012	1241	3.63	3.68	-0.06	.103
Self Awareness	924	3.73	3.70	.03	.421	1239	3.68	3.70	-0.02	.630
<b>Decision-making</b>										
I can resist peer pressure.	628	3.66	3.72	-.06	.434	817	3.44	3.67	-0.23	<.001
When I have to make a hard decision in life...										
I make the decision before thinking about all of the options.	912	2.87	2.98	-.11	.093	1227	2.99	2.95	0.03	.536
I talk with someone I trust about the decision.	908	3.85	3.78	.07	.206	1225	3.83	3.87	-0.04	.380
I feel helpless.	911	3.19	3.43	-.24	<.001	1227	3.25	3.23	0.02	.752
I make the decision based on what will make other people like me.	914	3.17	3.31	-.14	.014	1225	3.23	3.25	-0.02	.756

## Appendix D: Number of Sessions Offered and Attended by CAA Program

	Sessions Offered			Sessions Attended		
	Mean	Mini- mum	Maxi- mum	Mean	Mini- mum	Maxi- mum
<b>Total</b>	<b>39</b>	<b>1</b>	<b>128</b>	<b>26</b>	<b>0</b>	<b>113</b>
America SCORES Bay Area	92	46	98	78	30	95
America SCORES Boston	37	6	39	29	4	38
America Scores Chicago	24	16	38	22	3	38
America SCORES Cleveland	46	6	47	43	0	47
America SCORES Dallas	73	73	73	58	5	73
America SCORES DC	34	4	36	19	0	32
America SCORES Denver	49	26	83	45	26	76
America Scores New York	21	9	26	19	0	26
America SCORES Seattle	43	11	47	41	11	47
A's and Aces	60	60	60	.	.	.
Baltimore SquashWise	.	.	.	.	.	.
Beat the Streets Wrestling Philadelphia	51	51	51	26	0	47
Beyond the Ball	40	38	42	31	15	40
Black Women in Sport Foundation	45	45	45	29	10	41
Boston Scholar Athlete	28	28	28	.	.	.
Boys & Girls Club of Metro Atlanta	35	35	35	27	1	35
Boys & Girls Clubs of SELA	.	.	.	.	.	.
Bridge Lacrosse	40	30	40	26	18	39
Brotherhood Crusade LA	33	32	34	30	22	34
Chicago Run	54	21	79	44	13	78
Chris Paul (CP3) Afterschool Zone	.	.	.	.	.	.
Coach Art LA	63	10	89	27	0	83
CoachArt Bay Area	6	6	6	6	4	6
Cohen College Prep Middle School	49	49	49	46	37	49
Collegiate Academies	.	.	.	.	.	.
Colorado Rapids Youth Soccer Club	34	34	34	27	5	34
Community Rowing	.	.	.	.	.	.
Crim Fitness Foundation	5	3	7	4	0	7
El Monte CBI	36	36	36	23	0	36

	Sessions Offered			Sessions Attended		
	Mean	Mini- mum	Maxi- mum	Mean	Mini- mum	Maxi- mum
Family & Children Faith Coalition (d/b/a Hope for Miami)	30	16	51	18	3	33
Firstline	84	66	128	.	.	.
Girls in the Game	.	.	.	.	.	.
Harlem Lacrosse & Leadership - FDA Site	35	12	54	28	6	54
Heart of Los Angeles (HOLA)	12	8	12	10	7	11
Henry Street Settlement	45	16	68	19	1	54
I Challenge Myself	39	26	56	28	9	48
Illinois Youth Soccer Association	32	32	32	28	22	31
JT Dorsey Foundation (Kensington Soccer Club)	20	20	20	9	5	16
Lagniappe Academies	.	.	.	.	.	.
Lake Forest Elementary	.	.	.	.	.	.
Legacy Youth Tennis and Education	.	.	.	.	.	.
Metro Lacrosse	22	14	28	14	0	26
MetroSquash	34	3	51	26	3	47
MGR Foundation	8	5	10	5	1	10
Netball America	33	13	35	12	3	31
Notah Begay III Foundation	22	22	22	9	3	17
Oakland Lacrosse Club	37	25	39	32	20	38
Oakland Strokes	.	.	.	.	.	.
Parks and People Foundation	.	.	.	.	.	.
Philly Triple Threat	.	.	.	.	.	.
Play Rugby LA	10	10	10	9	4	10
Play Rugby NY	28	10	31	26	4	31
Raquet Up Detroit	40	10	48	32	2	47
Row New York	90	77	100	82	47	100
School of Basketball	13	13	13	3	1	5
Sheriff's Youth Foundation of Los Angeles County	113	113	113	69	12	113
Skate Like A Girl	.	.	.	.	.	.
Soccer Without Borders Baltimore	90	74	102	41	1	76
Soccer Without Borders Boston	50	50	50	22	0	39

	Sessions Offered			Sessions Attended		
	Mean	Mini- mum	Maxi- mum	Mean	Mini- mum	Maxi- mum
Soccer Without Borders California	97	58	110	44	2	104
Soccer without Borders Greenley	32	28	35	22	0	34
SOS Outreach	9	1	23	8	0	21
South Bronx United, Inc.	14	14	14	3	0	9
Southern California Golf Association	8	8	8	6	2	8
Sportsmen's Tennis Club	11	9	11	7	1	11
Squashbusters	83	22	111	69	15	100
StreetSquash	.	.	.	.	.	.
Tenacity	.	.	.	.	.	.
The Sanneh Foundation	.	.	.	.	.	.
The Service Board	34	26	36	27	1	34
The Youth Foundation	20	4	44	17	1	33
Touching Miami with Love	70	70	70	63	42	69
Triple Threat Mentoring	10	5	12	8	0	12
United for DC Soccer Club	35	35	35	28	4	35
Urban Initiatives	38	24	44	31	7	43
USTA National Junior Tennis & Learning Chapter-Adams 50	21	17	22	.	.	.
Washington Nationals Youth Baseball Academy	29	29	29	27	14	29
Westhab, Inc.	.	.	.	.	.	.
World Fit for Kids	77	58	81	65	37	81
World Sport Chicago	29	25	32	6	0	23
YET NFL	.	.	.	.	.	.
Youth Enrichment Services	10	2	10	5	0	8
Youth Speak Collective	15	8	17	7	1	16
Zhang Sah	.	.	.	.	.	.



## Appendix E: Survey Response Rates by CAA Program

	# of Participants	Baseline		Endline		Both	
		n	%	n	%	n	%
<b>Total</b>	<b>6288</b>	<b>4173</b>	<b>66%</b>	<b>2338</b>	<b>37%</b>	<b>1702</b>	<b>27%</b>
America SCORES Bay Area	23	20	87.0	16	69.6	15	65.2
America SCORES Boston	58	40	69.0	38	65.5	27	46.6
America Scores Chicago	69	60	87.0	57	82.6	50	72.5
America SCORES Cleveland	85	61	71.8	64	75.3	51	60.0
America SCORES Dallas	50	41	82.0	26	52.0	20	40.0
America SCORES DC	61	25	41.0	28	45.9	16	26.2
America SCORES Denver	41	32	78.0	18	43.9	11	26.8
America Scores New York	21	18	85.7	15	71.4	13	61.9
America SCORES Seattle	165	150	90.9	29	17.6	18	10.9
A's and Aces	16	14	87.5	9	56.3	7	43.8
Baltimore SquashWise	69	50	72.5	27	39.1	22	31.9
Beat the Streets Wrestling Philadelphia	56	18	32.1	18	32.1	17	30.4
Beyond the Ball	71	51	71.8	33	46.5	29	40.8
Black Women in Sport Foundation	44	33	75.0	11	25.0	10	22.7
Boston Scholar Athlete	45	33	73.3	0	0.0	0	0.0
Boys & Girls Club of Metro Atlanta	84	4	4.8	4	4.8	4	4.8
Boys & Girls Clubs of SELA	15	11	73.3	4	26.7	0	0.0
Bridge Lacrosse	42	21	50.0	36	85.7	21	50.0
Brotherhood Crusade LA	29	29	100.0	26	89.7	26	89.7
Chicago Run	64	39	60.9	23	35.9	10	15.6
Chris Paul (CP3) Afterschool Zone	28	12	42.9	0	0.0	0	0.0
Coach Art LA	59	35	59.3	23	39.0	16	27.1
CoachArt Bay Area	12	12	100.0	0	0.0	0	0.0
Cohen College Prep Middle School	24	20	83.3	0	0.0	0	0.0
Collegiate Academies	26	26	100.0	0	0.0	0	0.0
Colorado Rapids Youth Soccer Club	20	9	45.0	13	65.0	4	20.0
Community Rowing	35	35	100.0	35	100.0	35	100.0
Crim Fitness Foundation	65	64	98.5	46	70.8	45	69.2
El Monte CBI	55	55	100.0	25	45.5	25	45.5

	# of Participants	Baseline		Endline		Both	
		n	%	n	%	n	%
Family & Children Faith Coalition (d/b/a Hope for Miami)	326	123	37.7	116	35.6	73	22.4
Firstline	502	405	80.7	160	31.9	67	13.3
Girls in the Game	241	128	53.1	0	0.0	0	0.0
Harlem Lacrosse & Leadership - FDA Site	133	95	71.4	75	56.4	52	39.1
Heart of Los Angeles (HOLA)	21	17	81.0	13	61.9	11	52.4
Henry Street Settlement	74	52	70.3	33	44.6	27	36.5
I Challenge Myself	38	34	89.5	14	36.8	14	36.8
Illinois Youth Soccer Association	26	11	42.3	19	73.1	5	19.2
JT Dorsey Foundation (Kensington Soccer Club)	20	11	55.0	8	40.0	8	40.0
Lagniappe Academies	18	13	72.2	14	77.8	9	50.0
Lake Forest Elementary	56	42	75.0	39	69.6	25	44.6
Legacy Youth Tennis and Education	108	107	99.1	0	0.0	0	0.0
Metro Lacrosse	91	90	98.9	50	54.9	50	54.9
MetroSquash	95	64	67.4	53	55.8	36	37.9
MGR Foundation	19	15	78.9	0	0.0	0	0.0
Netball America	29	17	58.6	0	0.0	0	0.0
Notah Begay III Foundation	11	8	72.7	7	63.6	5	45.5
Oakland Lacrosse Club	32	32	100.0	32	100.0	32	100.0
Oakland Strokes	26	8	30.8	0	0.0	0	0.0
Parks and People Foundation	16	15	93.8	0	0.0	0	0.0
Philly Triple Threat	61	21	34.4	0	0.0	0	0.0
Play Rugby LA	48	37	77.1	29	60.4	24	50.0
Play Rugby NY	84	80	95.2	31	36.9	31	36.9
Raquet Up Detroit	38	32	84.2	22	57.9	18	47.4
Row New York	27	27	100.0	0	0.0	0	0.0
School of Basketball	141	31	22.0	0	0.0	0	0.0
Sheriff's Youth Foundation of Los Angeles County	58	33	56.9	32	55.2	13	22.4
Skate Like A Girl	28	17	60.7	0	0.0	0	0.0
Soccer Without Borders Baltimore	102	41	40.2	51	50.0	12	11.8
Soccer Without Borders Boston	26	15	57.7	14	53.8	6	23.1
Soccer Without Borders California	155	38	24.5	51	32.9	17	11.0

	# of Participants	Baseline		Endline		Both	
		n	%	n	%	n	%
Soccer without Borders Greenley	61	0	0.0	29	47.5	0	0.0
SOS Outreach	579	481	83.1	354	61.1	311	53.7
South Bronx United, Inc.	16	15	93.8	0	0.0	0	0.0
Southern California Golf Association	179	61	34.1	0	0.0	0	0.0
Sportsmen's Tennis Club	33	27	81.8	22	66.7	20	60.6
Squashbusters	133	118	88.7	120	90.2	109	82.0
StreetSquash	114	77	67.5	0	0.0	0	0.0
Tenacity	103	68	66.0	37	35.9	33	32.0
The Sanneh Foundation	46	29	63.0	0	0.0	0	0.0
The Service Board	68	35	51.5	21	30.9	17	25.0
The Youth Foundation	25	25	100.0	19	76.0	19	76.0
Touching Miami with Love	35	17	48.6	16	45.7	5	14.3
Triple Threat Mentoring	134	88	65.7	49	36.6	35	26.1
United for DC Soccer Club	18	17	94.4	0	0.0	0	0.0
Urban Initiatives	186	144	77.4	53	28.5	38	20.4
USTA National Junior Tennis & Learning Chapter-Adams 50	42	41	97.6	0	0.0	0	0.0
Washington Nationals Youth Baseball Academy	40	0	0.0	0	0.0	0	0.0
Westhab, Inc.	29	19	65.5	0	0.0	0	0.0
World Fit for Kids	98	77	78.6	77	78.6	57	58.2
World Sport Chicago	37	25	67.6	16	43.2	11	29.7
YET NFL	10	0	0.0	10	100.0	0	0.0
Youth Enrichment Services	131	90	68.7	0	0.0	0	0.0
Youth Speak Collective	44	22	50.0	10	22.7	6	13.6
Zhang Sah	45	20	44.4	18	40.0	14	31.1

## Appendix F: Data Cleaning Steps

The initial dataset was provided to AIR in a Microsoft Excel spreadsheet which included two tabs: one which contained baseline data from the Coach Across America programs included in the evaluation, and another which contained the labels and values for each of the variables in the dataset. As Up2Us received additional data for the dataset, it updated the spreadsheet and sent this updated dataset to AIR. AIR also communicated any issues, questions or concerns (e.g. data that was out of the range of a particular variable) they encountered while preparing the data for analysis and worked with Up2Us to resolve these issues. The most updated version of the dataset included data from the baseline survey and endline survey as well as attendance data. The data manager conducted the following steps to clean the data and transfer it to the statistical software package Stata 13.1:

- Checked all data for duplicate identification numbers
- An “X” was placed in the dataset to indicate missing data. Removed all X’s from the dataset so that Stata would properly read the data as missing.
- Deleted missing and invalid dates from the birth date (variable: birth) and interview date (variable: date1) columns.
- Changed the “K’s” (which stood for kindergarten) in the grade column to “0” since all of the grade data was numeric (e.g. a participant in eighth grade would have an “8” in this column).
- Separated the demographic data into a separate sheet. This would allow for easier processing when reshaping the dataset. The demographic variables in this sheet were as follows: code, code2, program, birth, grade gender, ethnicity, city, enrollment, coach1 and coach2.
- Removed the “code” variable from the attendance data. The attendance data would be merged with the demographic data later in the process, and as such only one key identifier was needed.
- Renamed the column headers of survey variables in the dataset to their measure labels (e.g. hia01, paq01).
- Added a “time” variable to the baseline dataset. Added value of “1” to the time variable for all baseline data.
- After double checking that information in baseline and endline data sheets aligned, copied and pasted endline data into the same sheet as baseline data.
- Added time value of “2” to all endline data.

Up2Us added a second “code” variable (code2). This was a numeric code that allowed the AIR team to easily import the data into Stata. The previous code variable was alphanumeric, which created an error in running frequencies on the dataset when in Stata.

After the final dataset was created, the data was loaded into Stata and labeled with variable and value labels. Since data from two time points was included in this dataset, the data needed to be reshaped from “long” data—where each participant had baseline and endline data but these two sets of data were contained in two separate rows—to “wide” data, where the baseline and endline data of one participant were contained in one row. The following steps were taken to reshape the dataset:

- Imported the attendance data sheet into Stata.
- Reshaped all variables in the attendance data sheet from “long” to “wide.”
- Checked that reshape was successful.
- Saved attendance data as separate dataset
- Imported the demographic data sheet into Stata.
- Reshaped all variables in the demographic data sheet from “long” to “wide.”
- Checked that reshape was successful.
- Saved demographic data as separate dataset.
- Imported the baseline and endline data sheet into Stata.
- Reshaped all variables in the baseline and endline data sheet from “long” to “wide.”
- Checked that reshape was successful.
- Saved attendance baseline and endline data as separate dataset.
- Cleared all data from Stata.
- Imported the newly saved attendance dataset.
- Merged attendance dataset with demographic dataset.
- Checked that merge was successful.
- Saved merged attendance data and demographic data into separate dataset.
- Imported newly saved baseline and endline data.
- Merged baseline and endline data with recently merged attendance and demographic data.
- Checked that merge was successful.
- Reapplied variable and value labels where missing.
- Saved merged dataset as final dataset.

## Appendix G. Program Outcomes by Grade Level

	ELEMENTARY SCHOOL					MIDDLE AND HIGH SCHOOL				
	n	Predicted Baseline mean	Predicted Endline mean	Difference	p	n	Predicted Baseline mean	Predicted Endline mean	Difference	p
<b>Physical Activity - PAQ Score</b>	1081	3.3840	3.4066	-0.02	.443	1478	2.9205	3.0698	-0.15	<.001
<b>Nutrition</b>										
In the past 24 hours, how many times did you...										
drink white milk?	505	2.87	3.01	-0.14	.234	628	2.78	2.72	0.06	.566
drink soda?	504	2.19	2.09	0.10	.390	624	2.23	2.03	0.20	.038
drink 100% fruit juice?	506	2.93	2.84	0.09	.483	627	2.84	2.48	0.36	.001
eat French fries, potato chips, other fried potatoes?	499	2.48	2.21	0.27	.020	626	2.41	2.06	0.34	<.001
eat fruit?	502	3.21	3.42	-0.21	.074	604	3.11	3.10	0.00	.984
eat vegetables?	505	2.73	2.80	-0.07	.522	611	2.91	2.67	0.25	.019
When I have to make a decision about what to eat or drink...										
I know the difference between what is healthy for me and what is not healthy	753	4.02	3.97	0.05	.558	1132	3.96	4.09	-0.13	.039
I usually choose the healthier option	750	3.62	3.65	-0.04	.715	1133	3.36	3.37	-0.01	.845
<b>High Impact Attributes</b>										
Positive Identity	1066	4.2958	4.3469	-0.05	.159	1446	4.3794	4.3693	0.01	.697
Situational Awareness	1066	3.4221	3.4690	-0.05	.256	1448	3.2831	3.3210	-0.04	.229
Plan B thinking	1069	3.5874	3.6770	-0.09	.032	1456	3.7598	3.8072	-0.05	.091
Future Focus	1068	4.0147	4.0880	-0.07	.061	1454	4.1745	4.1593	0.02	.579

	ELEMENTARY SCHOOL					MIDDLE AND HIGH SCHOOL				
	n	Predicted Baseline mean	Predicted Endline mean	Difference	p	n	Predicted Baseline mean	Predicted Endline mean	Difference	p
Discipline	1067	2.8878	2.9078	-0.02	.687	1454	2.8563	2.9383	-0.08	.022
Social Confidence	1069	3.4218	3.5153	-0.09	.028	1452	3.5835	3.5756	0.01	.798
Prosocial connections	1067	3.6933	3.7841	-0.09	.026	1451	3.5855	3.6569	-0.07	.019
Self-Awareness	1066	3.7039	3.7007	0.00	.940	1451	3.6947	3.7100	-0.02	.622
<b>Decision-making</b>										
I can resist peer pressure.	537	3.37	3.55	-0.18	.081	1035	3.67	3.83	-0.16	.001
When I have to make a hard decision in life...										
I make the decision before thinking about all of the options.	1052	2.87	2.90	-0.03	.588	1436	2.97	3.03	-0.06	.228
I talk with someone I trust about the decision.	1045	3.82	3.87	-0.05	.421	1440	3.84	3.81	0.02	.532
I feel helpless.	1053	3.12	3.19	-0.08	.188	1443	3.28	3.40	-0.12	.006
I make the decision based on what will make other people like me.	1048	3.02	3.08	-0.06	.307	1437	3.31	3.43	-0.12	.007

## Appendix H. Outcomes by Sex

	Male					Female				
	N	Predicted Baseline mean	Predicted Endline mean	Difference	p	N	Predicted Baseline mean	Predicted Endline mean	Difference	p
<b>Physical Activity - PAQ Score</b>	1370	3.25	3.34	-0.10	<.000	1189	2.99	3.07	-0.08	.003
<b>Nutrition</b>										
In the past 24 hours, how many times did you...										
drink white milk?	646	2.90	2.96	-0.06	.616	487	2.71	2.66	0.05	.651
drink soda?	642	2.30	2.11	0.20	.059	486	2.08	1.97	0.11	.270
drink 100% fruit juice?	646	2.91	2.64	0.26	.023	487	2.84	2.64	0.21	.075
eat French fries, potato chips, other fried potatoes?	642	2.48	2.16	0.32	.002	483	2.44	2.09	0.35	.001
eat fruit?	630	2.94	3.17	-0.24	.041	476	3.40	3.31	0.09	.441
eat vegetables?	634	2.76	2.73	0.03	.805	482	2.92	2.72	0.20	.074
When I have to make a decision about what to eat or drink...										
I know the difference between what is healthy for me and what is not healthy	996	3.92	4.11	-0.19	.014	889	4.07	4.02	0.05	.463
I usually choose the healthier option	996	3.49	3.57	-0.09	.282	887	3.45	3.38	0.07	.333
<b>High Impact Attributes</b>										
Positive Identity	1338	4.34	4.36	-0.01	.696	1174	4.36	4.38	-0.01	.651
Situational Awareness	1340	3.27	3.35	-0.08	.026	1174	3.42	3.43	-0.01	.862
Plan B thinking	1347	0.02	3.78	-3.76	.016	1178	3.67	3.71	-0.04	.224
Future Focus	1346	4.08	4.10	-0.02	.476	1176	4.17	4.17	0.00	.773
Discipline	1344	2.90	2.94	-0.04	.308	1177	2.82	2.90	-0.08	.059



	Male					Female				
	N	Predicted Baseline mean	Predicted Endline mean	Difference	p	N	Predicted Baseline mean	Predicted Endline mean	Difference	p
Social Confidence	1344	3.50	3.55	-0.06	.097	1177	3.55	3.56	-0.01	.867
Prosocial connections	1341	3.58	3.72	-0.15	<.000	1177	3.70	3.71	-0.01	.787
Self-Awareness	1341	3.70	3.74	-0.04	.280	1176	3.71	3.67	0.04	.290
<b>Decision-making</b>										
I can resist peer pressure.	852	3.60	3.74	-0.13	.043	720	3.50	3.67	-0.17	.008
When I have to make a hard decision in life...										
I make the decision before thinking about all of the options.	1325	2.88	2.95	-0.06	.225	1163	2.99	3.03	-0.04	.470
I talk with someone I trust about the decision.	1319	3.74	3.74	-0.01	.907	1166	3.95	3.95	0.00	>.99
I feel helpless.	1319	3.28	3.35	-0.08	.113	1167	3.13	3.26	-0.13	.010
I make the decision based on what will make other people like me.	1321	3.07	3.19	-0.12	.014	1164	3.32	3.40	-0.08	.131

## Appendix I. Outcomes by Program Intensity

	LOW INTENSITY (OFFERED)					HIGH INTENSITY (OFFERED)				
	n	Predicted Baseline mean	Predicted Endline mean	Difference	p value	n	Predicted Baseline mean	Predicted Endline mean	Difference	p value
<b>Physical Activity - PAQ Score</b>	1013	3.07	3.14	-0.07	.029	1277	3.18	3.31	-0.13	<.001
<b>Nutrition</b>										
In the past 24 hours, how many times did you...										
drink white milk?	530	2.71	2.77	-0.07	.724	533	2.78	2.88	-0.10	.280
drink soda?	527	2.60	1.95	0.66	<.001	531	2.12	2.09	0.02	.789
drink 100% fruit juice?	530	2.94	2.48	0.45	.013	533	2.90	2.80	0.10	.324
eat French fries, potato chips, other fried potatoes?	526	2.53	2.02	0.51	.001	531	2.49	2.20	0.29	.002
eat fruit?	521	3.06	3.18	-0.11	.541	516	3.18	3.25	-0.07	.472
eat vegetables?	528	2.55	2.78	-0.23	.215	518	2.82	2.64	0.18	.044
When I have to make a decision about what to eat or drink...										
I know the difference between what is healthy for me and what is not healthy	892	4.05	3.94	0.11	.237	1150	3.93	4.12	-0.19	.005
I usually choose the healthier option	890	3.50	3.46	0.04	.675	1138	3.47	3.55	-0.08	.229
<b>High Impact Attributes</b>										
Positive Identity	995	4.36	4.37	-0.01	.714	1255	4.35	4.35	0.00	.980
Situational Awareness	994	3.36	3.37	-0.01	.773	1257	3.35	3.41	-0.06	.100
Plan B thinking	1000	3.72	3.70	0.01	.732	1263	3.65	3.77	-0.12	.001
Future Focus	998	4.16	4.12	0.04	.214	1262	4.10	4.15	-0.05	.143
Discipline	998	2.93	3.01	-0.08	.067	1261	2.83	2.85	-0.02	.715

	LOW INTENSITY (OFFERED)					HIGH INTENSITY (OFFERED)				
	n	Predicted Baseline mean	Predicted Endline mean	Difference	p value	n	Predicted Baseline mean	Predicted Endline mean	Difference	p value
Social Confidence	998	3.54	3.59	-0.05	.147	1262	3.52	3.52	0.00	.988
Prosocial connections	997	3.69	3.79	-0.10	.006	1260	3.61	3.65	-0.04	.227
Self Awareness	998	3.76	3.73	0.03	.468	1259	3.66	3.68	-0.02	.680
<b>Decision-making</b>										
I can resist peer pressure.	660	3.71	3.73	-0.01	.843	792	3.41	3.67	-0.26	<.001
When I have to make a hard decision in life...										
I make the decision before thinking about all of the options.	986	2.90	3.01	-0.11	.063	1243	2.96	2.91	0.05	.367
I talk with someone I trust about the decision.	984	3.85	3.78	0.08	.124	1241	3.83	3.87	-0.04	.401
I feel helpless.	984	3.24	3.45	-0.21	<.001	1244	3.19	3.16	0.03	.588
I make the decision based on what will make other people like me.	988	3.18	3.35	-0.17	.002	1238	3.20	3.20	0.00	.943

## ABOUT AMERICAN INSTITUTES FOR RESEARCH

Established in 1946, with headquarters in Washington, D.C., American Institutes for Research (AIR) is an independent, nonpartisan, not-for-profit organization that conducts behavioral and social science research and delivers technical assistance both domestically and internationally. As one of the largest behavioral and social science research organizations in the world, AIR is committed to empowering communities and institutions with innovative solutions to the most critical challenges in education, health, workforce, and international development.

## LOCATIONS

### Domestic

Washington, D.C.  
Atlanta, GA  
Baltimore, MD  
Chapel Hill, NC  
Chicago, IL  
Columbus, OH  
Frederick, MD  
Honolulu, HI  
Indianapolis, IN  
Naperville, IL  
New York, NY  
Rockville, MD  
Sacramento, CA  
San Mateo, CA  
Waltham, MA

### International

Egypt  
Honduras  
Ivory Coast  
Kyrgyzstan  
Liberia  
Tajikistan  
Zambia



**6003 Executive Blvd., Suite 300**  
**Rockville, MD 20852**  
**301.592.8600**  
**[www.air.org](http://www.air.org)**

*Making Research Relevant*