Original Research

Out-of-School Sports Time and Children's Body Weight Status: Evidence from a Longitudinal Survey

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We used data from the Child Development Supplement (CDS) of the Panel Study of Income Dynamics in 2002 and 2007 to examine the relationship between the specific sport time spent during weekdays or weekends and American children's body mass index (BMI). Time spent on out-of-school sports was recorded on a randomly selected weekday and a weekend day. Sports were further categorized as formal (organized sports such as sports games or lessons) or casual (any unorganized sports such as sports time in the neighborhood). Child's height and weight were measured in person by interviewers. Body mass index was used to measure the child's body weight status. We applied ordinary least square and fixed effects regressions to examine the cross-sectional and longitudinal relationships between out-of-school sports time and children's body weight status. Children's socio-demographics and parental socioeconomic status were controlled in the analyses. Double time spent on out-of-school sports during weekdays from 2002 to 2007 was associated with a reduction of BMI by 0.14 units, but the effects of time spent on out-of-school sports during weekends did not achieve statistical significance. For boys and girls, time spent on weekday casual (formal) sports was associated with a reduction of BMI by 0.18 and 0.17 units, respectively. Time spent on out-of-school sports during weekdays was more significant than during weekends in reducing BMI among US children.

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INTRODUCTION

Childhood obesity in the US remains at an epidemic level.[1-2] Promoting physically active lifestyles among children is essential to reverse the tread.[3] Childhood sports participation significantly predicts physical activities (PA) and body weight status in adulthood.[4-8] However, most research has targeted physical education (PE) and sports activities during school hours,[9-11] while less focus has been given to PA outside of the school environment, partly because of the heterogeneity of the extracurricular sports and other leisure physical activities.[12-13]

Time allocation on sports reflects children's physical activities in leisure time. On average, school-age children spend 40% of their time sleeping and 20% of their time in school, which leaves 40% of their time to devote to other activities.[14] Given similar physical activities during school hours, time allocations to out-of-school activities can explain much about the disparity in body weight status among children.[i] Because controlled trials of PA interventions in schools have presented mixed evidence on their effectiveness in maintaining healthy weight in the school setting,[16,17] interventions in out-of-school environment deserves more attention. In this paper we explore the relationship between out-of-school sports time and children's body weight status.

There are limitations to existing studies on out-of-school sports. First, most studies are intervention-based with a small sample at one specific location, revealing little about the general population of children in the United States. Second, most studies are cross-sectional, thus a causal relationship cannot be drawn. Last, no studies have ever examined whether weekday and weekend out-of-school sports activities have different effects and whether boys and girls benefit the same from out-of-school sports.

This paper uses nationally representative longitudinal data to examine the relationship between time spent on out-of-school sports and body weight status among US children aged 5 to 19 years. The time diary survey has precise information on each child's time allocation. By using the fixed effects regression, we were able to remove time-invariant confounding factors and establish causation between time on out-of-school sports and body weight status. The results of this study can help communities design more effective PA interventions in the out-of-school environment to curb the childhood obesity epidemic in the US.

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METHODS

Data

The Panel Survey of Income Dynamics (PSID) is a longitudinal survey conducted in the US of a representative sample of men, women, and children since 1968. The Child Development Supplement (CDS) is a component of the PSID, which surveys children within the PSID households and tracks these children from childhood to young adulthood (until 19 years old). In 1997, a total of 2,394 households and 3,586 children 0-12 years of age were interviewed. In 2002 and 2007, the same children and families were re-interviewed, with a response rate of about 90% in both years.[18] The time use information is obtained from primary (usually the mother) and secondary caregivers (usually the father or grandmother) as well as children themselves. The time diary in the CDS records all activities in which the child participated starting from midnight on a randomly sampled weekday and a randomly sampled day in the weekend.

Each child was matched to their parents using the family ID. The age range of children in our sample was 5 to 14 years old in 2002 and 10 to 19 years old in 2007. After dropping observations with missing data and those not responding in 2007, our final sample size includes 1,109 children who were interviewed in both 2002 and 2007.

Variables

Body mass index. Both weight and height were measured by the interviewers in person using the same brand of scale and tape. BMI is calculated as weight (kg)/ height^2 (m^2).

Sports categories. For overall out-of-school sports, we aggregated seventy-two different items recorded in the CDS time diaries (see Appendix A). These activities fall into two broad categories: *formal sports*, including organized sport meets and games, practices and lessons taken in after-school hours, and *casual sports*, including unorganized sports outside of school. The same type of sports may occur in both categories. For example, swimming is categorized as a formal sport when a child attends a swimming team's practice, whereas it is categorized as a casual sport when a child swims on his or her own. Thus the distinction of formal and casual sports is based on whether the sport is organized or not, rather than the type of sport. The duration of each activity was recorded in minutes. Due to the skewness of the time distribution, we normalized the minutes with a natural logarithm. Since there were zero values, we used ln(x+1) to avoid dropping the zeros. Due to the various weather patterns across the country that may affect PA, we controlled for regions (South, West, Northeast, North Central) in the analyses.

Child characteristics. We controlled for children's socio-demographic variables including age, gender, and race for any growth effect on BMI. We also controlled variables representing energy expenditure in school. These variables are the number of PE days in a week and whether average PE duration is greater than 30 minutes. Duration of PE was not separated from other school activities in the time diary, thus we cannot include the exact duration. We also included variables representing calorie intake. These variables are whether the child had meals away from home (in friends' or relatives' places) and whether they had snacks regularly. Both variables are collected for weekdays and weekends. To control for potential substitution among daily activities, we included additional time-use variables, and they are time spent on the TV and computer, time playing videogames, time used for studying, and sleeping time. These variables are collected using the same time diary as the sports variables.

Parental characteristics. We also controlled for parental obesity status (at least one parent was obese), parents' combined working hours, parents' educational achievements, whether the child belongs to a single-parent family, and family income.[19,20] Parental height (in feet and inches) and weight (in pounds) are self-reported and they are obtained at the time of the interview. These variables are then used to construct parental BMI, which is defined as weight (kg)/ height^2 (m^2). Parental obesity is defined as if BMI is greater than or equal to 30.

Statistical Analysis

Descriptive statistics of the samples were provided for 2002, 2007, and the pooled sample. Since time on different categories of sports could be substitutes, we calculated pair-wise correlation coefficients to check the possible multi-collinearity.

The fixed effects (FE) model was applied to the pooled sample. The FE model essentially removed any time-invariant factors, such as genetic factors, that may affect body weight status. For comparison purposes, we also performed cross-sectional regressions using the 2002 and 2007 waves separately. The cross-sectional regressions were adjusted using the corresponding child weight in 2002 and 2007. The weighting technique assumes the weights are inversely related to the variance of an observation, which is consistent with the PSID weight design. For the longitudinal analyses, we ran un-weighted regressions due to there being no appropriate longitudinal weight available in the data. Since weekday and weekend sports time can both affect body weight status, we included both time variables in the same regression. We further divided out-of-school sports time into formal and casual sports time so we can examine whether sports categories can make an impact on children's body weight status. After careful examination, no significant multi-collinearity problem was detected. We also stratified the analyses by gender to examine whether the relationship between sports time and body weight status varied between boys or girls.

RESULTS

Descriptive Statistics

The results in 2002 and 2007 were weight adjusted to reflect the nationally representative sample (**Table 1**). Therefore, although the same children were included in 2002 and 2007, the descriptive statistics could be different since different

years of sampling weights were applied. Note that the pooled sample did not adjust the weights. The average BMI increased from 19.05 in 2002 to 23.01 in 2007**. Figure 1** summarizes out-of-school sports participation by gender, type of sports, and year. Panel A summarizes overall sports participation and Panels B & C summarize participation in formal and casual sports.

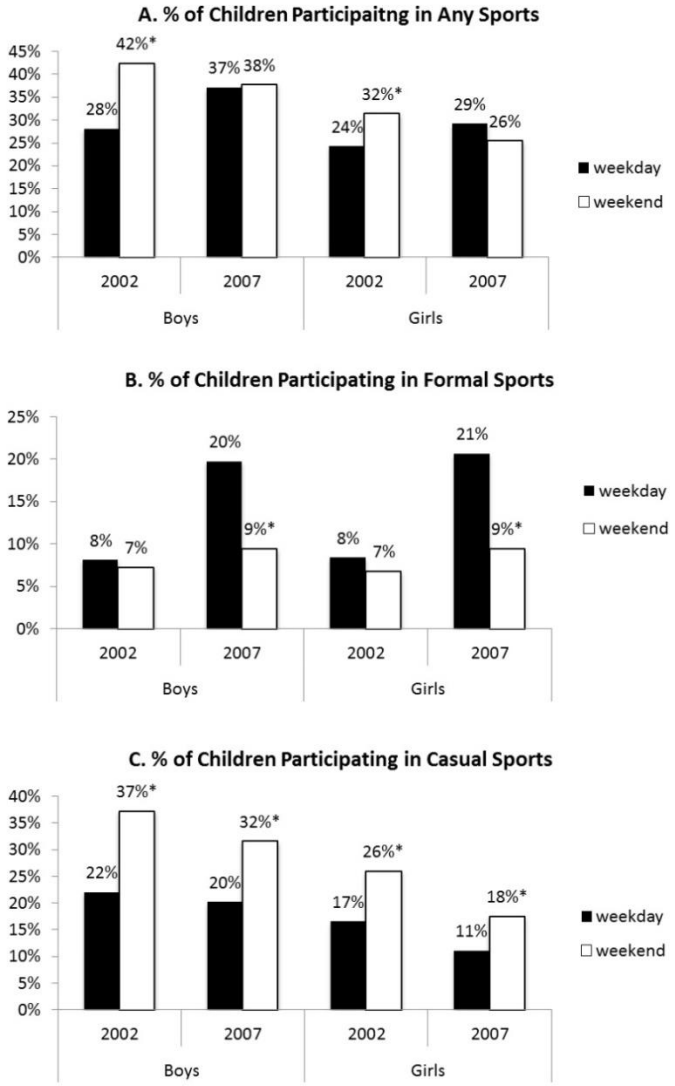

Figure 1. Time on Out-of-School Sports Participation by Type, Gender and Year.
* indicates the difference between the weekday and weekend variables are statistically significant at 1%.

We made several observations based on the results. First, there is a gender difference at both time points. In general, boys had a higher rate of sports participation than girls on both weekdays and weekends. For example, in 2002, 42% of boys and 32% of girls participated in sports on weekends. In 2007, 38% of boys and 26% of girls participated in sports on weekends. These differences are statistically significance with p-values of 0.004 and 0.000 for 2002 and 2007, respectively. A similar difference was observed for weekdays (28% vs 24% in 2002 and 37% vs 29% in 2007 for boys and girls, respectively) and these differences are again statistically significant (p-value = 0.006 for 2002; p-value = 0.000 for 2007). This gender difference was mainly driven by a higher percentage of boys playing casual sports. The rate for formal sports participation was very similar across gender. Second, sports participation differed between weekdays and weekends over time. From 2002 to 2007, sports participation on weekdays increased (28% to 37% for boys; 24% to 29% for girls) whereas sports participation on weekends decreased (42% to 38% for boys; 32% to 26% for girls). The increase in weekday sports participation was driven by formal sports participation. From 2002 to 2007, weekday formal sports participation increased from 8% to about 20% for both boys and girls. The decrease in weekend sports participation was driven by the decrease of casual sports participation (37% to 32% for boys; 26% to 18% for girls). The weekday-weekend effects were significant at 1% in casual sports across time and gender. The increase in formal sports participation mainly reflects an increased participation in organized sports as children grew older. The decrease in casual sports on weekdays was largely due to the increase in time spent in school and time spent on studying after school. Instead of using participation rate in any sports, we conducted sensitivity analyses using minutes spent on any sports and the results were very similar (see **Appendix B**).

Correlation between time on formal and casual sports

Table 2 shows the pairwise correlations in 2002 and 2007 for five variables (formal sports on weekday and weekend, casual sports on weekday and weekend, and average number of PE days in a week). We observed a positive and statistically significant correlation between weekday and weekend time on both formal sports (corr. = 0.19 in 2002; corr. = 0.27 in 2007) and casual sports (corr. = 0.25 in 2002 and corr. = 0.27 in 2007). The positive correlation indicates time spent on formal or casual sports was complementary instead of substitutionary. We found negative correlations between formal and casual sports, but the negative correlation is only statistically significant in 2007 between weekday formal and casual sports and the magnitude is small (corr. = -0.07). These results suggest that time spent on different categories of sports is likely to reflect underlying preferences.

Regression Results

Table 3 shows the regression results by gender and sports categories (overall, formal, and casual). The interpretation was in terms of percentage change because of the log transformation of the sports time variables.

Based on the fixed effects regressions in the pooled sample of 2002 & 2007, we found a significant effect of weekday sports time on BMI, but not weekend sports time. A 100% increase in sports time during the weekday (equivalent to a 30 minute increase if we evaluate at the mean) was associated with a significant reduction of BMI by 0.14 units. In addition, boys and girls benefited from sports time in different settings: Weekday *formal* sports had a significant effect on girls' BMI

and weekday *casual* sports had a significant effect on boys' BMI. A 100% increase in sports time per weekday (equivalent to 33 minutes increase for boys and 22 minutes increase for girls) was associated with 0.18 units reduction of BMI for boys and 0.17 units reduction of BMI for girls.

In the cross-section regressions (the first four columns), most of the coefficients for sports variables were negative, indicating a negative association between out-of-school sports time and BMI. But we also observed some differences across waves. In terms of overall sports time, weekday sports time was statistically significant in 2002 (coefficient = -0.21, 95% CI = -0.37, -0.06) whereas weekend sports time was statistically significant in 2007 (coefficient = -0.17, 95% CI = -0.36, -0.02). In 2002, when the children were 5 to 14 years of age, casual sports played a more important role, whereas in 2007 formal sports played a more important role, reflecting the growing influence of organized sports on adolescents.

Table 1. Descriptive statistics of children participating in the child development supplement of the panel survey of income dynamics in 2002 and 2007.

	2002 Mean or % (SD)	2007 Mean or % (SD)	2002 & 2007 Mean or % (SD)
Sample size	1,109	1,109	2,218
Body mass index	19.05 (4.57)	23.01 (5.79)	21.45 (5.97)
Child age	9.07 (2.23)	13.98 (2.23)	11.46 (3.26)
Male	50.04%	50.18%	50.95%
White	59.77%	60.13%	45.54%
Black	14.55%	13.92%	37.96%
Hispanic	18.91%	18.96%	11.72%
Other race	8.28%	8.48%	6.31%
# of PE days in a week	1.39 (2.20)	2.82 (2.43)	2.15 (2.48)
% have average PE time > 30 min	21.19%	41.41%	32.55%
% having meals away from home during the weekday	15.33%	19.34%	17.54%
% having meals away from home during the weekend	23.87%	23.17%	21.50%
% having snacks during the weekday	36.63%	25.52%	30.30%
% having snacks during the weekend	21.80%	14.30%	17.67%
Household income ($)	67138.93 (67701.22)	88032.91 (89768.87)	66833.63 (71913.25)
% of households with at least one obese parent	32.35%	39.95%	38.63%
Combined parents' working hours per week	59.41 (28.42)	58.44 (28.77)	54.07 (28.60)
% of households with highest education less than high school	18.95%	16.04%	18.76%
% of households with highest education high school	21.26%	24.82%	26.78%
% of households with highest education more than high school	59.79%	59.13%	54.46%
% of households with single parent	20.27%	22.16%	32.46%

Note: Sample mean and standard errors in parentheses are shown for continuous variables. Sample mean is shown for indicator variables. Summary statistics for the same children in 2002 and 2007 are presented after adjusting for the appropriate sample weight. The differences in time-invariant variables (such as gender and race) across the two years are due to the adjustment of sample weight.

Table 2. Pairwise correlations between time spent on sports activities.

	Formal sports weekday	Formal sports weekend	Casual sports weekday	Casual sports weekend	Number of PE days per week
Year 2002					
Formal sports weekday	1.00				
Formal sports weekend	0.19*	1.00			
	(0.00)				
Casual sports weekday	-0.03	0.01	1.00		
	(0.38)	(0.64)			
Casual sports weekend	0.09*	-0.03	0.25*	1.00	
	(0.00)	(0.35)	(0.00)		
Number of PE days in a week	0.16*	0.01	-0.01	0.09*	1.00
	(0.00)	(0.74)	(0.77)	(0.00)	
Year 2007					
Formal sports weekday	1.00				
Formal sports weekend	0.27*	1.00			
	(0.00)				
Casual sports weekday	-0.07*	-0.03	1.00		
	(0.03)	(0.39)			
Casual sports weekend	0.03	-0.03	0.27*	1.00	
	(0.36)	(0.30)	(0.00)		
Number of PE days in a week	0.01	0.01	-0.02	0.03	1.00
	(0.67)	(0.73)	(0.62)	(0.35)	

Note: * indicates the correlation is statistically significant at 5%. The number below indicates p-value.

Table 3. Coefficients of Linear Regression of Cross Sectional Models in 2002 and 2007 and Fixed Effects Models for both years predicting Body Mass Index of children in Panel Survey of Income Dynamics (PSID).

	2002		2007		2002 & 2007	
Stratification	Coefficient	95% CI	Coefficient	95% CI	Coefficient	95% CI
(a) Time playing any sports						
All children						
Weekday	-0.21***	[-0.37, -0.06]	-0.11	[-0.30, 0.08]	-0.14***	[-0.22, -0.05]
Weekend	0.08	[-0.06, 0.21]	-0.17*	[-0.36, 0.02]	-0.04	[-0.13, 0.04]
Boys						
Weekday	-0.19	[-0.46, 0.07]	-0.11	[-0.39, 0.18]	-0.13**	[-0.25, -0.02]
Weekend	0.04	[-0.18, 0.27]	-0.08	[-0.37, 0.20]	-0.06	[-0.16, 0.05]
Girls						
Weekday	-0.22**	[-0.41, -0.02]	-0.11	[-0.35, 0.14]	-0.12*	[-0.24, 0.00]
Weekend	0.09	[-0.08, 0.26]	-0.29**	[-0.50, -0.07]	-0.02	[-0.16, 0.12]
(b) Time playing formal sports						
All children						
Weekday	-0.10	[-0.35,0.16]	-0.16*	[-0.34, 0.03]	-0.10**	[-0.20, -0.00]
Weekend	-0.08	[-0.30, 0.14]	-0.05	[-0.29, 0.19]	-0.01	[-0.15, 0.12]
Boys						
Weekday	-0.17	[-0.62, 0.28]	-0.09	[-0.38, 0.20]	-0.02	[-0.16, 0.13]
Weekend	-0.05	[-0.39, 0.29]	0.03	[-0.35, 0.41]	0.09	[-0.08, 0.26]
Girls						
Weekday	-0.04	[-0.34, 0.27]	-0.20	[-0.46, 0.06]	-0.17**	[-0.32, -0.03]
Weekend	-0.13	[-0.41, 0.15]	-0.19	[-0.43, 0.06]	-0.11	[-0.31, 0.10]
(c) Time playing casual sports						
All children						
Weekday	-0.29***	[-0.45, -0.12]	0.02	[-0.29, 0.32]	-0.14**	[-0.25, -0.03]
Weekend	0.11	[-0.03, 0.26]	-0.16	[-0.40, 0.08]	-0.04	[-0.13, 0.04]
Boys						
Weekday	-0.23*	[-0.49, 0.02]	-0.09	[-0.49, 0.31]	-0.18**	[-0.32, -0.04]
Weekend	0.07	[-0.16, 0.30]	-0.06	[-0.38, 0.27]	-0.09*	[-0.19, 0.01]
Girls						
Weekday	-0.30***	[-0.50, -0.09]	0.15	[-0.27, 0.56]	-0.03	[-0.18, 0.13]
Weekend	0.15	[-0.03, 0.32]	-0.30*	[-0.62, 0.01]	0.02	[-0.14, 0.18]

Note:
(1) Overall sample size is 1,109 in each year. There are 564 males and 544 females in both 2002 and 2007. The combined 2002 and 2007 sample uses 2218 observations. The 95% confidence interval is shown in brackets.
(2) *, **, *** indicate statistical significance at 5%, 1%, and 0.1%, respectively.
(3) The 2002 and 2007 samples were separately estimated by ordinary least squares, and the standard errors were corrected for heteroskedasticity. The 2002 and 2007 combined sample was estimated using the fixed effects model, and the standard errors were adjusted for clustering at the individual level. The 2002 child weight was applied to the 2002 regression, and the 2007 child weight was applied to the 2007 regression. The 2002+2007 combined sample did not have an appropriate weight, thus the FE estimates were not weighted.
(4) Child demographics and parental variables, other time-use variables (TV, computer, video games, studying, and sleeping), number of days and duration in physical education, meals away from home, snacking, family background variables, and year dummies were controlled in all regressions.

DISCUSSION

As far as we know, this is the first study that has detected a different effect between weekday and weekend out-of-school sports time on children's body weight status using nationally representative data and a time diary survey. Our results suggest a significant negative association between weekday but not weekend out-of-school sports time and children's BMI. Furthermore, the "weekday sports effect" had a gender difference: more casual sports time significantly reduced boys' BMI, whereas formal sports time had a negative impact on girls' BMI.

Several factors may explain why weekday and weekend sports time had different effects on children's BMI. Given the standard PE or other physical activities in school settings, weekday out-of-school sports time adds additional energy expenditure. However, weekend sports may depend on the child's and household's time allocation among alternative activities, and the intensity of PA during the weekends may vary. Moreover, as children grow older, they are more likely to participate in formal sports during the weekdays than on weekends. Formal or organized sports provided the strongest effect in reducing body weight status among all forms of PA. Therefore, encouraging students to enroll in team sports or sports lessons after school hours could effectively reduce their BMI. Finally, the substitution between sports and non-sports activities could differ on weekdays and weekends. By using the same time diary data, we found that sports activities have negative associations with studying and sleeping time

during both weekdays and weekends. In addition, we found a statistically significant negative association between sports activities and TV viewing during weekdays, but this association is not significant during weekends. In other words, sports on weekdays may "crowd out" sedentary behaviors, such as TV viewing, but may not achieve the same during weekends. Thus, families, schools, and communities should promote more out-of-school sports during weekdays instead of weekends.

The gender disparity in the relationship between weekday sports time and body weight status provides some interesting insights. Since Title IX of the Education Amendments of 1972 banned sex discrimination in athletic program enrollment, more girls have participated in team sports or sport lessons across time.[21] However, formal sports time during the weekdays had a significantly negative association with girls' BMI but not boys'. Using the same data, we further divided formal sports into sports lessons (such as, dance lessons, swimming, tennis, gymnastics, etc.) and team-based sports (meets, games, and practices). Interestingly, more girls participated in lessons (4.2% for girls vs 0.9% for boys), while they had a lower participation rate in team-based sports (10.5% for girls vs. 13.0% for boys). When we ran regressions by separating lessons and team-based sports for girls, we found that team-based sports played an important role in reducing girls' BMI. It could be that the intensity of team-based sports is higher than that of lessons. This result is consistent with the literature that uses controlled trials to examine the effect of team sports on body weight status.[22] Although participation rates in formal sports were similar across gender, boys had a significantly higher percentage participating in casual sports during the weekdays (21.1% for boys vs. 14.0% for girls). This partially explains why casual sports time during the weekdays significantly reduced boys' BMI but not girls'. Perhaps parents should encourage girls to increase their participation in casual sports on weekends.

Our work provides important evidence for the effectiveness of sports time in the out-of-school setting, which echoes the literature on the significance of sports in reducing childhood obesity.[23] Our findings augment the literature on the gender differences of sports effects. For example, Treuth et al. found that among rural boys and girls, there was a significant positive relationship between inactive time and body fat in girls but not in boys.[24] Berkey et al found that time in aerobics/dancing was beneficial to the reduction of BMI among girls and overweight boys.[25] However, this study provides fresh insights for schools and communities in regard to setting up different types of sports for boys and girls during the week.

Strengths

This study has several strengths. First, our data are longitudinal and nationally representative. By using the fixed effects model, we can establish causation between out-of-school sports time and BMI, which cannot be concluded from cross-sectional studies. Second, the CDS is the only nationally representative survey that provides detailed time use information for children. This enables us to not only include all sports activities but also control other daily activities that could potentially affect children's body weight. Last, unlike previous studies that typically used a crude measure for PA, our measure takes into account all sports activities, which were noted right after the child completed the activity, thus reducing recall bias.

Limitations

There are several limitations. First, it is not possible with our data to account for the intensity of each sport activity. Second, we only examined activities on two days of the week rather than on all days. Although it is possible that children may vary their time use depending on day of the week, it can be argued that their time use pattern is rather similar across weekdays.[26] Third, because of the long span of our data (5 years), there may be a reverse causality problem. It could be that the child gained body weight first, which makes the child less likely to participate in sports. We tested this hypothesis by using the 2002 BMI to predict weekday and weekend sports participation in 2007. We found that a higher BMI was associated with a lower probability of participating in sports during weekends but was not associated with lower sports participation during weekdays. This result suggests that our estimates for the weekday variables did not significantly suffer from reverse causality bias. Finally, we were not able to examine overweight and obese status using the fixed effects regression. In the pooled sample, children whose overweight or obese status did not change were dropped in the fixed effects regression, which significantly limited the sample size and the power to test the hypotheses.

CONCLUSIONS

As children entered their adolescence, there was a large increase in weekday out-of-school sports participation and a decrease in weekend sports participation. This increase in weekday out-of-school participation deserves special attention, because our results indicated that weekday sports time was a significant protector of children's healthy body weight status. The key implication of our finding is that well-designed weekday out-of-school sports may allow children to form a healthy habit of participating in physical activities regularly, which is associated with lower body weight status in the long run.

CONFLICT OF INTEREST
None.

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ABBREVIATIONS
BMI – body mass index; CDS – Child Development Supplement; PE – physical education; PSID - Panel Survey of Income Dynamics.

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Appendix A. Definitions of Sports Activities

There are three separate activity categories in the time diary of the Child Development Supplement: lessons, meets, and sports in general. We defined formal sports as the combination of the first two categories (lessons & meets) and defined casual sports as the last category (sports in general). Based on the Child Development Supplement, sports in general were for informal "pick up" games, not officially organized teams or lessons. Exact minutes in each activity were recorded for both a randomly selected weekday and a randomly selected weekend day.

Definitions of Formal and Casual Sports.

Formal Sports
• Lessons: dance, swimming, golf, tennis, skating, gymnastics, yoga, martial arts, body movement, and aerobics. • Sporting meets or games: unspecified team sports, football, baseball/softball, basketball, volleyball, soccer, hockey, swimming, track/running, gymnastics/dance, unspecified individual sports, tennis, squash, golf, ice skating, martial arts, boxing and wrestling, and bowling
Casual Sports
• "Sports outside both meets and lessons" include football, basketball, baseball, volleyball, hockey, soccer, field hockey, unspecified sports using racquets, tennis, squash, racquetball, paddleball, golf, swimming, water-skiing, skiing, sledding, snowboarding, ice skating, roller skating, unspecified recreational sports, bowling, pool, miniature golf, Frisbee/catch, unspecified gym exercises, judo/boxing, martial arts, wrestling, weight lifting, gymnastics, hunting, fishing, boating, extreme sports, bicycling, tricycling, horseback riding, walking for pleasure, hiking, jogging, and non-social dance/ballet hiking, jogging, and non-social dance/ballet

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Appendix B.