Teen Sport in America, Part II:

Her Participation Matters

A Women's Sports Foundation Research Report, April 2021

Women's Sports Foundation

Acknowledgments

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About the Women's Sports Foundation

The Women's Sports Foundation exists to enable girls and women to reach their potential in sports and life. We are an ally, an advocate and a catalyst. Founded by Billie Jean King in 1974, we strengthen and expand participation and leadership opportunities through research, advocacy, community programming and a wide variety of collaborative partnerships. The Women's Sports Foundation has positively shaped the lives of millions of youth, high school and collegiate student-athletes, elite athletes, and coaches. We're building a future where every girl and woman can #KeepPlaying and unlock the lifelong benefits of sport participation. All girls. All women. All sports. To learn more about the Women's Sports Foundation, please visit www.WomensSportsFoundation.org

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Letter from the CEO

Founded by Billie Jean King in 1974, the Women's Sports Foundation is committed to ensuring that all girls and women have equal access to sports and physical activity and the tremendous life-long benefits they provide. This a critical time in our history when the multiple and intersecting challenges of a global pandemic, racial justice, and economic insecurity have had an enormous impact on families and young people, disproportionately affecting communities of color. We are committed to ensuring that those most affected receive the support and healing they need to recover and thrive.

Throughout development and especially during times of crisis, participation in physical activity and sport for young people can be a lifeline. The physical, social, and emotional benefits of participation are well documented and underscore the need to invest in greater access and opportunity. This remains front and center, as many sport programs have been placed on pause during the pandemic or in some cases, eliminated altogether. For girls in particular, the gender gap in sport is of great concern and their return to play, all the more paramount.

Teen Sport in America, Part II: Her Participation Matters provides new data that identifies the specific health, academic, and psychological benefits that teen girls obtain on a sport-by-sport basis. This new report is an extension of the WSF's original 2018 *Teen Sport in America: Why Participation Matters* that provides evidence of the important role that sports can play in promoting positive development among a large national sample of teens in high school. However, the report did not take into consideration how girls fare from their sport participation specifically. *Teen Sport in America Part II: Her Participation Matters* offers close examination of girls' participation across 20 sports and the health, educational, and social-psychological benefits shown to be critical for long-term healthy development. The data and recommendations that follow will inform the development of policy and sport programming and, at this particular time, can be used to promote the importance of investing in girls' sports. From educators, community leaders, and parents to grant-makers, business leaders, and policymakers — we all have a vital role to play in ensuring that girls reap the benefits of participation. There has never been a more critical time for this work.

The Women's Sports Foundation is proud to be at the forefront of research and practice, and we look forward to working with other leaders in the field to bring these new research findings to life.

Dr. Deborah Antoine
CEO, Women's Sports Foundation

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Introduction

This extension of the WSF's 2018 *Teen Sport in America: Why Participation Matters* Report set out to identify the health, academic, and psychological benefits that teen girls obtain on a sport-by-sport basis. The original 2018 Teen Sport report provided evidence of the important role that sports can play in promoting positive development among a large national sample of teens in high school. However, the report did not take into consideration how girls fare from their sport participation specifically. Given that the culture of girls' sport as well as girls' socialization and experiences in sport have been shown to significantly differ from that of boys (Zarrett et al., 2019), it is highly likely that benefits gained from sport are also likely to differ for girls. In fact, some earlier work suggests that some of the negative health behaviors that have been associated with sports participation (e.g., alcohol use/abuse) are more common within male sport culture and socialization experiences and are less normative for girls' sport culture (Eccles et al., 2003).

Previous research and policy have provided some evidence of the positive impact that sports can play in promoting girls' positive development (Daniels & Leaper, 2006; Shifrer et al., 2015; Staurowsky et al., 2015; Zarrett et al., 2009; Zarrett et al., 2018); however, most of previous research has considered a limited number of well-being outcomes and has not considered the ways in which adolescent health, well-being, and educational achievement vary from sport to sport. Each sport has a distinct subculture and provides a distinct experience that likely influences girls' behaviors and development in different ways. For these reasons, the benefits girls receive from sport can differ depending on both the type of sport they play and how many different sports they play. Exposure to multiple types of sports can provide a greater range of positive experiences and reinforce these experiences to support girls' development.

Thus, the current report set out to examine the ways in which sports participation is related to positive teen girls' well-being. We were interested in looking across a number of positive outcomes of well-being to get a more informed profile of the influence of sports participation on teen girls' health, academic achievement, and psychological well-being. We also considered differences by 1) the number of sports in which girls participated and 2) by type of sport. This involved a close examination of the strengths and challenges of each of the 20 most popular teen sports in the United States for promoting teen girls' well-being across a wide range of important behaviors and outcomes within health, academic achievement, and psychological well-being. Using a rating system, we

provide a profile of strengths and risks for each sport for supporting teen well-being in Appendix II on page 34. This rating system approach is not intended to compare and contrast the health and risk profiles between sports, but rather, to identify potential areas within each sport in need of attention and improvement. The approach and results of this report will provide an evidence-based gateway for identifying and assessing strengths and risks within each sport that can help inform the future development of sport programming (e.g., coach training), as well as familiarize the wider public and the Women's Sports Foundation leadership with some key research findings about teen girls.

Methods

Teen Sport in America, Part II: Her Participation Matters is based on an analysis of the Monitoring the Future (MTF) nationwide surveys (2006–18), a federally funded longitudinal study of American secondary education students (Miech et al., 2020). See the Measures Index on p. 31 for a complete list of all survey questions. Approximately 50,000 students from the eighth, 10th, and 12th grades have been surveyed annually since 1975 on a wide range of topics concerning their health behaviors, substance use, academic achievement, social/civic engagement, and psychological health.[1] The list of 20 sports included in the MTF survey included the 10 most popular sports in the United States for girls, according to the National Federation of State High School Associations' (NFHS) 2018–19 participation survey (i.e., track and field, volleyball, basketball, soccer, softball/baseball,[2] cross-country, tennis, swimming & diving, competitive spirit/cheerleading, and lacrosse) and 10 additional emerging youth sports (or less popular sports among girls) identified by the NFHS survey (i.e., golf, crew, equestrian, field hockey, football, gymnastics, ice hockey, water polo, weightlifting, and wrestling). An "other" response option also was included for girls who participate in other less-popular sport opportunities (see Table 1). Therefore, the MTF survey data is optimal for systematically examining critical variations in adolescents' education and health behaviors by a) their overall participation in sports, b) the "breadth" or number of sports in which they participate, and c) the type of sport in which they participate using a large, representative sample of girls. The report aims to test hypothesized relationships between participation in each specific sport and various measures of healthy development for teen girls. All data analyses control for key sociodemographic variables like race/ethnicity and socioeconomic status given differences observed in participation by these characteristics (see Tables 2 and 3 on following pages). In this way, our report answers questions about how each specific sport is related to healthy development for all participating teen girls, regardless of their race/ethnicity or socioeconomic background.

Table 1: Teen Girls' Sport Participation

Overall	**Girls**
Does not participate in sport	43.9%
Participates in at least one sport	56.1%
Number of sports	
Does not participate in sport	43.9%
Participates in one sport	29.8%
Participates in 2+ sports	26.3%
Most popular sports	
Volleyball	11.6%
Basketball	11.1%
Baseball/Softball	10.9%
Soccer	10.1%
Track and Field	10.1%
Swimming and Diving	6.7%
Cheerleading	6.1%
Tennis	5.5%
Weightlifting	4.1%
Cross Country	4.0%
Gymnastics	2.6%
Football	2.3%
Lacrosse	1.7%
Emerging sports/less popular	
Field Hockey	1.2%
Equestrian	1.2%
Golf	1.1%
Wrestling	0.7%
Crew	0.3%
Ice Hockey	0.3%
Water Polo	0.3%
Other Sport	18.9%

1 The current report includes two new additional cohorts in the sample since the 2018 Teen Report.

2 Although the item includes both softball and baseball, based on girls' national participation statistics, it is likely that the majority of the girls in the current report are participating in softball.

Table 2: Examining Differences in Teen Girls' Sport Participation by Race

Overall	White	Black	Hispanic	Other	
Does not participate in sport	40.0%	50.9%	52.5%	43.6%	***
Participates in at least one sport	60.0%	49.1%	47.5%	56.4%	***
Number of sports					
Does not participate in sport	40.0%	50.9%	52.5%	43.6%	***
Participates in one sport	31.2%	26.3%	27.7%	29.8%	***
Participates in 2+ sports	28.8%	22.8%	19.8%	26.6%	***
Most popular sports					
Basketball	9.8%	18.5%	9.0%	11.9%	***
Volleyball	12.5%	9.5%	9.3%	12.4%	***
Soccer	10.6%	2.7%	14.8%	8.7%	***
Baseball/Softball	12.7%	7.8%	8.8%	8.6%	***
Track and Field	10.3%	14.3%	6.8%	9.2%	***
Cheerleading	6.0%	8.2%	3.8%	6.8%	***
Swimming and Diving	6.9%	4.6%	5.9%	8.4%	**
Tennis	6.1%	4.2%	2.7%	6.9%	***
Gymnastics	2.9%	2.2%	1.9%	2.1%	
Weightlifting	4.6%	3.6%	3.0%	3.5%	*
Cross Country	4.4%	2.3%	3.7%	3.7%	**
Football	2.0%	2.9%	1.8%	2.9%	
Lacrosse	2.1%	0.5%	0.8%	1.7%	***
Emerging sports/less popular					
Field Hockey	1.6%	0.2%	0.3%	1.3%	***
Golf	1.4%	0.4%	0.6%	0.8%	**
Equestrian	1.8%	0.0%	0.2%	0.1%	***
Wrestling	0.6%	0.7%	0.7%	1.2%	
Crew	0.3%	0.2%	0.5%	0.3%	
Ice Hockey	0.4%	0.1%	0.2%	0.5%	*
Water Polo	0.3%	0.0%	0.3%	0.5%	
Other Sport	20.3%	16.2%	15.7%	18.7%	***

p<.05; p<.01**; p<.001****
Significance tests were based on Chi-Square tests of independence (see methods section for more details).

Table 3: Examining Differences in Teen Girls' Sport Participation by Socioeconomic Status and Urbanicity

	Socioeconomic Status			Urbanicity			
Overall	**Both parents have less than a college degree**	**At least one parent has a college degree**		**Rural**	**Suburban**	**Urban**	
Does not participate in sport	50.1%	36.5%	***	40.5%	42.7%	47.9%	***
Participates in at least one sport	49.9%	63.5%	***	59.5%	57.3%	52.1%	***
Number of sports							
Does not participate in sport	49.9%	36.5%	***	40.5%	42.7%	47.9%	***
Participates in one sport	27.9%	32.0%	***	27.9%	31.8%	28.1%	***
Participates in 2+ sports	21.9%	31.5%	***	31.6%	25.5%	24.0%	***
Most popular sports							
Basketball	10.4%	11.7%		14.8%	9.4%	10.7%	***
Volleyball	10.7%	12.6%	**	14.4%	11.2%	10.2%	***
Soccer	9.1%	11.1%	***	8.7%	10.6%	10.1%	***
Baseball/Softball	11.4%	10.7%		16.4%	9.7%	8.9%	***
Track and Field	8.4%	12.0%	***	12.7%	10.2%	7.9%	***
Cheerleading	5.5%	6.6%	*	8.1%	5.7%	5.1%	***
Swimming and Diving	4.9%	8.7%	***	4.8%	7.2%	7.5%	***
Tennis	4.1%	6.7%	***	5.1%	5.6%	5.5%	
Gymnastics	1.9%	3.2%	***	2.3%	2.8%	2.3%	
Weightlifting	4.1%	4.2%		5.5%	4.0%	3.0%	***
Cross Country	2.9%	5.3%	***	4.9%	3.7%	3.7%	*
Football	2.2%	2.3%		2.3%	2.2%	2.2%	
Lacrosse	1.0%	2.4%	***	0.7%	1.5%	2.5%	***
Emerging sports/less popular							
Field Hockey	0.7%	1.6%	***	1.1%	1.0%	1.5%	*
Golf	0.6%	1.6%	***	1.5%	1.2%	0.7%	*
Equestrian	0.9%	1.5%	**	1.5%	1.3%	0.8%	*
Wrestling	0.8%	0.6%		0.8%	0.7%	0.8%	
Crew	0.2%	0.4%		0.3%	0.4%	0.3%	
Ice Hockey	0.2%	0.5%	*	0.0%	0.4%	0.5%	**
Water Polo	0.2%	0.4%		0.1%	0.3%	0.5%	
Other Sport	17.2%	20.7%	***	18.7%	19.7%	17.8%	

p<.05; p<.01**; p<.001****
Significance tests were based on Chi-Square tests of independence (see methods section for more details).

Key Findings

This report set out to develop a large assessment comparing teen girl athletes and non-athletes in relation to a wide range of health, educational, and social-psychological indices shown to be critical for long-term healthy development. Developmental profiles of female athletes across 20 sports will inform the development of policy and sport programming to best promote girls' positive development. This study will also help educators, coaches, athletic directors, and parents understand and assess the role that different sports can play in girls' development.

U.S. Teen Girls' Participation Rates

Sports are a highly popular organized activity for teen girls, with 56.1% reporting participation in at least one sport (see Table 1 on page 6). Among girl sport participants, almost half (26.3%) reported participating in two or more sports. The five most popular sports that girls participated in were volleyball, basketball, baseball/softball, soccer, and track and field; however, girls' participation spanned across the wide range of different sports measured. The additional two new cohort years in this report show a 5% decrease in teen girls' sport participation from the 2018 Teen Report, with similar decreases observed in the percentage of girls in one sport and two or more sports. Aligned with our previous studies (Zarrett et al., 2019; Zarrett et al., 2020), significant disparities in participation by race/ethnicity and socioeconomic status were also observed. White girls and girls from higher-income families have significantly higher participation rates than African American/Black and Hispanic girls and those from lower socioeconomic backgrounds and are more likely to participate in two or more sports (see Tables 2 and 3 on pages 7 and 8). However, consideration of the demographic composition of each sport suggested substantial variation in diversity by type of sport. Although the majority of sports (11 of the 20) had particularly high participation rates among White girls compared to Black or Hispanic girls, basketball, cheerleading, and track and field had significantly higher participation rates among Black girls than among White and Hispanic girls. Participation rates for soccer were significantly higher among Hispanic girls than among either Black or White girls. Additionally, Black and Hispanic girls had slightly higher participation rates in football than White girls, but these differences were not found to be statistically significant (see Table 2 on page 7). Although the majority of sports (13 of the 20) had significantly higher participation rates among girls with greater family resources, some sports (basketball, softball/baseball, weightlifting, football, wrestling, crew, and water polo) did not demonstrate economic disparities in participation (see Table 3 on page 8).

Differences in sport participation rates by urbanicity (i.e., between urban, rural, and suburban communities) were also found to favor the participation of girls from rural communities. Girls from rural areas in the United States also were more likely than their urban and suburban counterparts to participate in two or more sports, and they showed the highest participation rates in nine of the sports considered (see Table 3). However, five sports had significantly lower participation rates among rural girls. Lacrosse and field hockey showed more popularity among girls in urban areas compared to those in rural and suburban areas. Soccer, swimming and diving, and ice hockey had similar high participation rates for girls in both urban and suburban areas compared to those in rural areas. There were no differences by urbanicity for seven of the sports (including the other sports category).

Pronounced attrition in sport occurred with each consecutive grade. Although much of these observed declines in participation are due to attrition in sports entirely, the increased percentages of girls participating in a single sport coupled with decreased numbers in two or more sports during the 10th grade also indicate that some observed attrition resulted from girls' increased specialization in a single sport. All 20 sports lost participants between eighth and 12th grades. The average attrition of girls across the 20 sports between the eighth

and 12th grades was an alarming 29.6% (see Table 4). These attrition rates are almost double those found in the larger, full sample of the 2018 Teen report that included both boys and girls and indicate that girls are dropping out of sports at much higher rates than boys are. Among the 20 sports, the highest attrition rates were observed in gymnastics (69%), volleyball (61.2%), basketball (63.8%), football (63.3%), crew (60.3%), field hockey (60.2%), and cheerleading (58.4%). However, all sports had losses greater than 20% (range 21%–69%).

Table 4: Examining Attrition in Teen Girls' Sport Participation between Eighth and 12th Grade

Overall	8th Grade	10th Grade	12th Grade		Attrition Rate (2) (eighth to 12th)
Does not participate in sport	20.33%	28.98%	43.88%	***	na
Participates in at least one sport	79.67%	71.02%	56.12%	***	29.6%
Number of sports					
Does not participate in sport	20.33%	28.98%	43.88%	***	na
Participates in one sport	26.81%	34.22%	29.84%	***	-11.3%
Participates in 2+ sports	52.87%	36.80%	26.28%	***	50.3%
Most popular sports					
Basketball	30.49%	15.16%	11.05%	***	63.80%
Volleyball	30.02%	15.35%	11.64%	***	61.20%
Soccer	20.64%	13.14%	10.08%	***	51.20%
Baseball/Softball	18.68%	13.12%	10.95%	***	41.30%
Track and Field	19.67%	12.47%	10.13%	***	48.50%
Cheerleading	14.57%	10.43%	6.06%	***	58.40%
Swimming and Diving	12.17%	7.89%	6.75%	***	44.60%
Tennis	7.40%	6.45%	5.51%	***	25.50%
Gymnastics	8.29%	4.49%	2.57%	***	69.00%
Weightlifting	5.21%	6.46%	4.09%	***	21.60%
Cross Country	5.67%	4.08%	4.02%	***	29.20%
Football	6.20%	3.13%	2.28%	***	63.30%
Lacrosse	2.87%	2.58%	1.67%	***	41.70%
Emerging sports/less popular					
Field Hockey	3.03%	2.05%	1.21%	***	60.20%
Golf	2.25%	2.17%	1.11%	***	50.90%
Equestrian	1.94%	1.90%	1.22%	***	37.30%
Wrestling	1.52%	1.04%	0.78%	***	48.90%
Crew	0.88%	0.90%	0.35%	***	60.30%
Ice Hockey	0.72%	0.63%	0.37%	***	48.50%
Water Polo	0.68%	0.63%	0.32%	***	53.80%
Other Sport	21.98%	21.40%	18.93%	***	13.90%

p<.05; p<.01**; p<.001****
Significance tests were based on Chi-Square tests of independence (see methods section for more details).

(2) Attrition rates were created with the following procedure:
Step 1: (12th-grade participation rate)/(eighth-grade participation rate) = Retention rate
*Step 2: (1-retention rate)*100=(Attrition rate as a percentage)*

Health Behaviors

Diet and Nutrition

Six different eating behaviors were examined to determine the influence of sport on girls' diets and nutrition: whether girls reported that, on a daily basis, they 1) eat breakfast, 2) eat vegetables, 3) eat fruit, 4) consume at least one soft drink (regular or diet), 5) consume at least one energy drink, and 6) consume at least one energy shot. Analysis of the large, nationally representative MTF sample provides support for the benefits of sports participation in promoting girls' healthy diet. Girls who participated in sports were significantly more likely to eat breakfast and fruits and vegetables daily than non-participants were (see Table 5a on following page). The impact of sports on these healthy behaviors increased with the number of sports girls participated in, so that those who participated in two or more sports were more likely than girls who participated in one sport to engage in these healthy eating behaviors. For the consumption of soft drinks, sport participation was only linked with lower consumption among girls who participated in at least two sports (see Table 5b on following page). At this level of analysis, sport participation was not a protective factor against the use of energy drinks or shots — research indicated similar rates of consumption for both athletes and non-athletes.

Sport Profiles. For diet/nutrition, several sports displayed a similar profile of positive health behaviors (see Table 5c on page 13). Girls who participated in cross country, tennis, track and field, and weightlifting all reported daily consumption of breakfast and fruits and/or vegetables at higher percentages than girls in all other sports and non-athletes; and cross country, tennis, and track and field participants reported lower consumption of soft drinks. A few of the other sports stood out as having some positive nutritional features for participants compared to non-athletes and athletes in other sports. For example, girls participating in soccer, volleyball, and equestrian were more likely to eat fruits and green vegetables every day, girls in lacrosse were more likely to eat breakfast and fruits daily, and girls in crew were more likely to eat green vegetables and less likely to consume soft drinks. In contrast, participation in baseball/softball was linked to a particularly less healthy diet compared to other sports and non-athletes, with girls in this sport less likely to eat breakfast each day, less likely to eat green vegetables, and more likely to consume energy drinks/shots and soft drinks. Girls in a few additional sports (swimming and diving, ice hockey, and wrestling) were more likely than non-athletes and those in other sports to consume energy drinks/shots. Girls in wrestling were also less likely than others to eat breakfast daily. See Appendix II (Table A) on page 34 for each sport's diet and nutrition rating.

Table 5a: Examining the Influence of Teen Girls' Sport Participation on Diet and Nutrition (Any Participation)

Blue indicates a significant positive impact on the outcome;
Red refers to a significant negative impact on the outcome.

Diet and nutrition	Eats breakfast every day	Eats green vegetables every day	Eats fruit every day	Has at least one soft drink per day	Has at least one energy drink per day	Has at least one energy shot per day
Does not participate in sport	30.5%	34.2%	42.0%	62.7%	21.7%	5.8%
Participates in at least one sport	**38.1%*** **	**44.6%*** **	**55.8%*** **	59.0%	20.9%	5.9%

p<.05; p<.01**; p<.001****
Significance tests were based on logistic regression analyses controlling for age, sex, race, parental education (i.e., socioeconomic status), U.S. region, and urbanicity (see methods section for more details). Controlling for these factors helps determine if participation in certain sports have an impact on healthy development for all participants regardless of these important background characteristics.

Table 5b: Examining the Influence of Teen Girls' Sport Participation on Diet and Nutrition (Participation in Multiple Sports)

Blue indicates a significant positive impact on the outcome;
Red refers to a significant negative impact on the outcome.

Diet and nutrition	Eats breakfast every day	Eats green vegetables every day	Eats fruit every day	Has at least one soft drink per day	Has at least one energy drink per day	Has at least one energy shot per day
Does not participate in sport	30.5%	34.2%	42.0%	62.7%	21.7%	5.8%
Participates in one sport	**35.9%** **	**42.6%*** **	**52.4%*** **	60.0%	21.4%	6.3%
Participates in 2+ sports	**40.7%*** **	**46.9%*** **	**59.9%*** **	**57.8%***	20.4%	5.5%

p<.05; p<.01**; p<.001****
Significance tests were based on logistic regression analyses controlling for age, sex, race, parental education (i.e., socioeconomic status), U.S. region, and urbanicity (see methods section for more details).

Table 5c: Examining the Influence of Teen Girls' Sport Participation on Diet and Nutrition (Participation in Specific Sports)

Blue indicates a significant positive impact on the outcome;
Red refers to a significant negative impact on the outcome.

Overall	Eats breakfast every day	Eats green vegetables every day	Eats fruit every day	Has at least one soft drink per day	Has at least one energy drink per day	Has at least one energy shot per day
All respondents	34.6%	40.0%	49.4%	60.7%	21.2%	6.1%
Does not participate in sports	30.5%	34.2%	42.0%	62.7%	21.7%	5.8%
Most popular sports						
Basketball	39.1%	39.1%	51.4%	63.1%	21.2%	5.9%
Volleyball	38.1%	**46.9%****	**60.4%*****	62.1%	22.2%	6.8%
Soccer	40.1%	**49.6%*****	**60.7%*****	59.1%	19.9%	6.4%
Baseball/Softball	**31.3%****	**38.1%***	52.8%	**66.4%***	**26.5%***	**7.5%***
Track and Field	**45.2%****	**48.2%***	**61.4%*****	51.6%**	19.2%	4.9%
Cheerleading	37.5%	40.3%	52.8%	63.1%	20.6%	5.0%
Swimming and Diving	38.6%	52.4%	**63.2%***	55.8%	**24.3%***	6.7%
Tennis	**44.5%****	**53.9%*****	**64.2%*****	**54.1%***	18.5%	5.1%
Gymnastics	35.6%	49.7%	57.2%	56.5%	18.3%	5.6%
Weightlifting	**45.6%***	**53.8%****	**62.6%***	57.6%	26.3%	5.0%
Cross Country	**54.4%*****	51.6%	**66.9%*****	**42.4%*****	16.3%	**2.2%***
Football	37.2%	46.9%	55.6%	66.7%	28.1%	8.4%
Lacrosse	**53.7%****	54.5%	**70.0%****	45.9%	24.1%	4.5%
Emerging sports/less popular						
Field Hockey	46.9%	54.9%	61.1%	46.0%	14.2%	4.4%
Golf	42.7%	54.1%	64.7%	57.0%	20.4%	4.6%
Equestrian	38.2%	**59.9%****	**68.6%****	61.3%	22.5%	6.5%
Wrestling	**20.0%****	45.0%	60.0%	63.0%	25.9%	**17.7%***
Crew	44.0%	**60.0%***	59.2%	**28.6%*****	22.4%	8.2%
Ice Hockey	33.3%	40.0%	53.3%	60.0%	40.0%	**20.0%***
Water Polo	37.8%	60.0%	72.7%	45.5%	13.6%	9.1%
Other Sport	35.4%	44.1%	53.7%*	59.7%	21.6%	5.4%

p<.05; p<.01**; p<.001****

Significance tests were based on logistic regression analyses controlling for age, sex, race, parental education (i.e., socioeconomic status), U.S. region, and urbanicity (see methods section for more details).

Physical Activity and Rest

To measure active lifestyles, the researchers examined girls' reports of whether they exercise seven days a week, and whether this exercise includes vigorous physical activity (activity that makes you feel "out of breath" for at least 30 minutes) nearly every day. For rest, girls reported whether they get seven hours of sleep nearly every day. Compared to non-athletes, sport participants were significantly more likely to engage in daily exercise, vigorous daily exercise, and acquire at least seven hours of sleep every night (See Table 6a). Across all active lifestyle measures, the influence of sport improved with the number of sports in which girls participated, so that participation in one sport provided more benefits than no sport participation, and participation in two or more sports was healthier than participation in one sport (see Table 6b).

Sport Profiles. For active lifestyle and sleep, all sport types fared similarly to or better than "other sports" and non-athletes (see Table 6c on following page). Baseball/softball and soccer stood out as particularly healthy, linked with significantly higher percentages of girls reporting daily physical activity, daily vigorous activity, and adequate sleep than all other girls in the sample. However, several other sports also reported either engaging in activity seven days a week or vigorous activity almost every day along with adequate sleep; these were cross country, volleyball, equestrian and weightlifting. There were no sports that stood out as needing improvement. See Appendix II (Table B on page 35) for each sport's physical activity and rest rating.

Table 6a: Examining the Influence of Teen Girls' Sport Participation on Physical Activity (Any Participation)

Blue indicates a significant positive impact on the outcome;
Red refers to a significant negative impact on the outcome.

Physical activity and rest	Exercises vigorously every day	Exercises 7 days a week	Gets 7 hours of sleep every day
Does not participate in sport	11.0%	4.8%	23.0%
Participates in at least one sport	**41.9%*** **	**13.6%*** **	**30.0%*** **

p<.05; p<.01**; p<.001****
Significance tests were based on logistic regression analyses controlling for age, sex, race, parental education (i.e., socioeconomic status), U.S. region, and urbanicity (see methods section for more details).

Table 6b: Examining the Influence of Teen Girls' Sport Participation on Physical Activity (Participation in Multiple Sports)

Blue indicates a significant positive impact on the outcome;
Red refers to a significant negative impact on the outcome.

Physical activity and rest	Exercises vigorously every day	Exercises 7 days a week	Gets 7 hours of sleep every day
Does not participate in sport	11.0%	4.8%	23.0%
Participates in one sport	**32.3%*** **	**10.3%*** **	**27.7%*** **
Participates in 2+ sports	**53.3%*** **	**17.5%*** **	**32.7%*** **

p<.05; p<.01**; p<.001****
Significance tests were based on logistic regression analyses controlling for age, sex, race, parental education (i.e., socioeconomic status), U.S. region, and urbanicity (see methods section for more details).

Table 6c: Examining the Influence of Teen Girls' Sport Participation on Physical Activity (Participation in Specific Sports)

Blue indicates a significant positive impact on the outcome;
Red refers to a significant negative impact on the outcome.

Overall	Exercises vigorously every day	Exercises 7 days a week	Gets 7 hours of sleep every day
All respondents	29.0%	10.0%	27.2%
Does not participate in sports	11.0%	4.8%	23.0%
Most popular sports			
Basketball	51.4%***	17.1%	32.4%
Volleyball	43.4%*	15.2%	32.3%***
Soccer	53.7%***	19.3%***	33.6%***
Baseball/Softball	53.2%***	20.9%***	33.1%*
Track and Field	62.2%***	18.3%***	32.4%
Cheerleading	39.2%***	11.9%	30.2%
Swimming and Diving	45.0%	15.7%	27.6%
Tennis	40.9%**	13.6%	30.7%
Gymnastics	50.8%	17.8%	28.3%
Weightlifting	57.3%*	20.9%	31.3%**
Cross Country	65.8%***	15.7%	38.3%***
Football	49.2%	21.1%	25.6%
Lacrosse	68.7%***	26.9%***	31.3%
Emerging sports/less popular			
Field Hockey	48.7%	18.4%	33.6%
Golf	44.6%	16.0%	31.8%
Equestrian	39.3%	25.9%***	39.9%**
Wrestling	43.8%	13.8%	18.8%
Crew	40.8%	20.0%	22.0%
Ice Hockey	36.7%	22.6%	23.3%
Water Polo	64.4%**	20.0%	28.9%
Other Sport	35.3%***	10.9%	24.3%*

p<.05; p<.01**; p<.001****

Significance tests were based on logistic regression analyses controlling for age, sex, race, parental education (i.e., socioeconomic status), U.S. region, and urbanicity (see methods section for more details).

Substance Use Behaviors

As another critical component of physical health, the researchers also looked at the link between sports participation and the three most prevalent risky substance-use behaviors among youth (i.e., cigarette use, alcohol binge drinking, and marijuana use). In some instances, sports participation was found to be protective against girls' substance use (see Table 7a). Although there were no differences between athletes and non-athletes in the likelihood to binge drink (sports was neither a protective nor risk factor), participation even in one sport was protective against smoking cigarettes. Participation in at least two sports was protective against marijuana use and provided additional benefits to the prevention of cigarette use (see Table 7b).

Sport Profiles. The sport-by-sport analyses for substance use show that most sport types fared similarly to each other and to non-athletes (see Table 7c on following page) but that there were a few sports that were particularly protective against substance use/abuse and even a few sports that were related to greater risk. Girls who played basketball, soccer, and track and field had lower risk for smoking cigarettes, and girls in cross country and tennis had significantly lower risk for marijuana use. For alcohol binge drinking, only equestrian stood out as particularly healthy compared to the other sports and non-athletes. In contrast, cheerleading and lacrosse were risk factors for binge drinking, as football and ice hockey were so for cigarette use. See Appendix II (Table C on page 36) for each sport's substance use rating.

Table 7a: Examining the Influence of Teen Girls' Sport Participation on Substance Use (Any Participation)

Blue indicates a significant positive impact on the outcome;
Red refers to a significant negative impact on the outcome.

Substance use	Past 30-day cigarette use	Past 2-week binge drinking	Past 30-day marijuana use
Does not participate in sport	12.2%	15.2%	20.9%
Participates in at least one sport	**9.5%*** **	**16.9%**	**18.4%** **

p<.05; p<.01**; p<.001****
Significance tests were based on logistic regression analyses controlling for age, sex, race, parental education (i.e., socioeconomic status), U.S. region, and urbanicity (see methods section for more details).

Table 7b: Examining the Influence of Teen Girls' Sport Participation on Substance Use (Participation in Multiple Sports)

Blue indicates a significant positive impact on the outcome;
Red refers to a significant negative impact on the outcome.

Substance use	Past 30-day cigarette use	Past 2-week binge drinking	Past 30-day marijuana use
Does not participate in sport	12.2%	15.2%	20.9%
Participates in one sport	**10.4%***	16.7%	19.0%
Participates in 2+ sports	**8.4%*** **	17.2%	**17.7%** **

p<.05; p<.01**; p<.001****
Significance tests were based on logistic regression analyses controlling for age, sex, race, parental education (i.e., socioeconomic status), U.S. region, and urbanicity (see methods section for more details).

Table 7c: Examining the Influence of Teen Girls' Sport Participation on Substance Use (Participation in Specific Sports)

Blue indicates a significant positive impact on the outcome;
Red refers to a significant negative impact on the outcome.

Overall	Past 30-day cigarette use	Past 2-week binge drinking	Past 30-day marijuana use
All respondents	10.8%	16.2%	19.6%
Does not participate in sports	12.2%	15.2%	20.9%
Most popular sports			
Basketball	6.9%*	15.0%	19.3%
Volleyball	9.5%	17.9%	18.2%
Soccer	7.3%***	19.1%	18.1%
Baseball/Softball	12.2%	17.8%	19.4%
Track and Field	6.5%*	15.1%	16.8%
Cheerleading	11.1%	19.0%*	17.5%
Swimming and Diving	10.1%	20.2%	19.3%
Tennis	7.8%	15.4%	14.7%*
Gymnastics	11.9%	22.2%	16.3%
Weightlifting	13.4%	17.3%	19.8%
Cross Country	6.4%	14.7%	13.6%*
Football	16.1%**	22.7%	25.0%
Lacrosse	14.90%	30.3%**	26.7%
Emerging sports/less popular			
Field Hockey	7.0%	25.9%	22.3%
Golf	7.0%	14.8%	12.8%
Equestrian	10.5%	11.7%**	14.1%
Wrestling	20.0%	23.4%	28.8%
Crew	8.2%	11.6%	14.6%
Ice Hockey	29.0%*	24.1%	25.0%
Water Polo	17.8%	15.9%	23.8%
Other Sport	9.3%*	12.9%**	16.8%*

p<.05; p<.01**; p<.001****

Significance tests were based on logistic regression analyses (see methods section for more details) controlling for age, sex, race, parental education (i.e., socioeconomic status), U.S. region, and urbanicity.

Academic Achievement

Eight different academic indicators were examined to determine the influence of sports participation on girls' academic self-concepts, behaviors (e.g., attendance), expectations and aspirations, and achievement. Compared to non-athletes, a larger percentage of girls who play sports reported earning an average grade of "A" in school and rated themselves as "above average" on school ability. Sport participants also were less likely to miss school because of illness and were more likely than non-athletes to endorse high educational and occupational aspirations and expectations, with significantly higher percentages reporting that they aspired to and "definitely will" graduate from a four-year college and aspired to and "definitely will" attend professional or graduate school after college (see Table 8a). For all indicators of academic achievement and attainment, the likelihood of benefitting from sports participation increased with the number of sports in which girls participated (see Table 8b on following page). Moreover, compared to non-athletes and athletes who played one sport, a significantly higher percentage of girls who played at least two sports rated themselves as "above average" in intelligence and were less likely to "cut" class.

Table 8a: Examining the Influence of Teen Girls' Sport Participation on Academic Achievement (Any Participation)

Blue indicates a significant positive impact on the outcome;
Red refers to a significant negative impact on the outcome.

Academic achievement	Self-rated school ability above average	Self-rated intelligence above average	Past month cut class (full-day)	Past month missed class due to illness	Past month skipped class (partial)	Average grade in school A or A-	Will graduate from a four-year college	Will attend graduate or professional school
Does not participate in sport	25.9%	26.9%	30.3%	48.7%	26.2%	38.2%	59.5%	26.1%
Participates in at least one sport	**33.8%*** **	31.4%	28.7%	**43.3%*** **	26.8%	**47.0%*** **	**72.9%*** **	**32.9%*** **

p<.05; p<.01**; p<.001****

Significance tests were based on logistic regression analyses controlling for age, sex, race, parental education (i.e., socioeconomic status), U.S. region, and urbanicity (see methods section for more details). Controlling for these factors helps determine if participation in certain sports have an impact on healthy development for all participants regardless of these important background characteristics.

Table 8b: Examining the Influence of Teen Girls' Sport Participation on Academic Achievement (Participation in Multiple Sports)

Blue indicates a significant positive impact on the outcome;
Red refers to a significant negative impact on the outcome.

Academic achievement	Self-rated school ability above average	Self-rated intelligence above average	Past month cut class (full-day)	Past month missed class due to illness	Past month skipped class (partial)	Average grade in school A or A-	Will graduate from a four-year college	Will attend graduate or professional school
Does not participate in sport	25.9%	26.9%	30.3%	48.7%	26.2%	38.2%	59.5%	26.1%
Participates in one sport	31.6%**	30.0%	30.9%	43.1%***	27.4%	45.0%**	71.6%**	30.8%***
Participates in 2+ sports	36.3%***	33.0%*	26.1%*	43.6%**	26.0%	49.4%***	74.4%***	35.3%***

p<.05; p<.01**; p<.001****
Significance tests were based on logistic regression analyses controlling for age, sex, race, parental education (i.e., socioeconomic status), U.S. region, and urbanicity (see methods section for more details).

Sport Profiles. Among all 20 sports, tennis and volleyball stood out as having the highest percentages of girls who excelled academically across the indicators measured (see Table 8c on following page). Girls in both sports reported positive academic self-concepts, high academic performance, high aspirations/expectations of graduating from a four-year college, and, for volleyball, high aspirations/expectations of attaining additional education post-graduation than all other female athletes and non-athletes. Higher percentages of girls participating in track and field rated themselves "above average" on school ability, had high aspirations/expectations of graduating from a four-year college, and were less likely than girls in other sports to miss school because of illness. In contrast, football showed the lowest percentages of girls who were excelling across the multiple indicators of academic achievement, with lower academic performance (had an average grade of "A" in school), lower ability perceptions, and lower educational expectations/aspirations compared to girls in all other sports and non-athletes. Ice hockey also reported lower educational aspirations, and significantly fewer girls in baseball/softball rated themselves as above average in intelligence compared to non-athletes and other sports. See Appendix II (Table D on page 37) for each sport's academic achievement rating.

Table 8c: Examining the Influence of Teen Girls' Sport Participation on Academic Achievement (Participation in Specific Sports)

Blue indicates a significant positive impact on the outcome;
Red refers to a significant negative impact on the outcome.

Overall	Self-rated school ability above average	Self-rated intelligence above average	Past month cut class (full-day)	Past month missed class due to illness	Past month skipped class (partial)	Average grade in school A or A-	Will graduate from a four-year college	Will attend graduate or professional school
All respondents	29.8%	29.1%	29.6%	45.7%	26.7%	42.5%	59.5%	30.0%
Does not participate in sports	27.9%	26.9%	30.3%	48.7%	26.2%	38.2%	67.0%	26.1%
Most popular sports								
Basketball	33.4%	31.1%	27.1%	42.4%	26.8%	46.1%	70.5%	33.5%
Volleyball	36.9%**	35.0%**	27.7%	44.2%	24.8%	51.3%**	73.1%**	36.1%**
Soccer	33.9%	30.3%	29.0%	41.9%	28.5%	48.3%	73.7%**	33.9%
Baseball/ Softball	28.9%	26.2%**	28.2%	41.9%	25.4%	45.8%	69.5%	30.7%
Track and Field	38.3%**	33.5%	25.2%	39.5%*	27.0%	51.2%	74.4%*	35.8%
Cheerleading	30.0%	28.7%	29.6%	47.8%	26.5%	46.3%	74.2%***	37.3%***
Swimming/ Diving	38.3%	38.7%	26.8%	48.9%	30.2%	46.8%	73.6%	37.5%
Tennis	44.9%***	40.3%**	24.9%	42.4%	24.1%	61.1%***	84.4%***	36.9%
Gymnastics	33.3%	34.1%	23.7%	45.8%	25.6%	41.8%	72.6%	39.2%
Weightlifting	37.7%	36.9%	26.6%	44.8%	31.0%	46.8%	69.4%	37.1%
Cross Country	40.5%	35.8%	23.4%	35.6%*	24.1%	58.5%**	74.9%	33.7%
Football	25.8%***	32.1%	34.7%	49.4%	32.6%	38.3%*	59.9%***	27.3%**
Lacrosse	42.3%	42.1%	32.3%	46.3%	31.3%	51.1%	87.2%**	42.4%*
Emerging sports/less popular								
Field Hockey	39.3%	29.7%	27.9%	46.8%	26.5%	53.6%	85.7%*	35.1%
Golf	38.9%	37.4%	19.6%	39.2%	18.1%	54.5%	71.0%	40.0%*
Equestrian	42.4%	40.7%**	22.7%	42.9%	15.7%*	53.8%	76.9%	32.7%
Wrestling	28.8%	22.5%	35.1%	57.7%	39.5%	35.0%	57.5%	27.5%
Crew	34.7%	26.5%	12.2%*	57.1%	24.5%	46.9%	89.8%**	35.4%
Ice Hockey	40.0%	45.2%	29.0%	36.7%	25.8%	36.7%	58.1%*	23.3%
Water Polo	50.0%*	45.5%	25.0%	51.1%	35.6%	40.0%	75.0%	37.2%
Other Sport	31.3%	30.7%	27.3%	48.0%	25.8%	44.1%	69.9%	33.6%*

p<.05; p<.01**; p<.001****

Significance tests were based on logistic regression analyses controlling for age, sex, race, parental education (i.e., socioeconomic status), U.S. region, and urbanicity (see methods section for more details). Please note that the percentages for "would want to graduate from a four-year college" and "would want to attend graduate or professional school" were omitted due to redundancy.

Psychological Health

Sports participation showed positive links to all areas of girls' psychological health measured: participants being more likely to report high self-esteem, self-efficacy, and social support and less likely to report fatalistic attitudes, self-derogation, depression, and loneliness (see Table 9a). Similar to physical health and academic achievement, the likelihood of psychologically benefitting from sports participation increased with the number of sports in which girls participated, and for self-efficacy and fatalism only girls who participated in two or more sports incurred benefits of participation (see Table 9b on following page).

Table 9a: Examining the Influence of Teen Girls' Sport Participation on Psychological Health (Any Participation)

Blue indicates a significant positive impact on the outcome;
Red refers to a significant negative impact on the outcome.

Psychological health (based on a scale from 1 to 5)	Self-esteem (high score = high self-esteem)	Fatalism (high score = high fatalism)	Self-efficacy (high score = high self-efficacy)	Loneliness (high score = high loneliness)	Self-derogation (high score = high self-derogation)	Social support (high score = high social support)	Depression (high score = low level of depression)
Does not participate in sport	3.85	2.34	3.71	3.08	2.39	4.05	3.70
Participates in at least one sport	**4.05*** **	**2.22*** **	**3.82*** **	**2.86*** **	**2.15*** **	**4.21*** **	**4.04*** **

p<.05; p<.01**; p<.001****
Significance tests were based on ordinary least squares regression (see methods section for more details) controlling for age, sex, race, parental education (i.e., socioeconomic status), U.S. region, and urbanicity. Controlling for these factors helps determine if participation in certain sports have an impact on healthy development for all participants regardless of these important background characteristics.

Sport Profiles. Girls who participated in some of the most popular sports (e.g., basketball, cheerleading, soccer, lacrosse, tennis, volleyball) along with equestrian, appeared to fare best in psychological health compared to all other girls in the sample (see Table 9c on following page). Girls who played basketball were particularly noteworthy for being more likely than the rest of the sample to perform well on all the measures of psychological well-being in the study except depression in which they did not differentiate from the others. Equestrian also had a particularly positive profile with participation linked with higher rates of self-esteem and social support and lower rates of fatalism, loneliness, and self-derogation. Girls participating in cheerleading, lacrosse, soccer, tennis and volleyball all had higher self-esteem and social support, and low rates of self-derogation and depression, with cheerleading and tennis also reporting high self-efficacy. In contrast, girls who played football and wrestling fared worse overall in psychological well-being compared to the national sample. Wrestlers were more likely to struggle with fatalism and self-derogation, while girls in football more often struggled with loneliness and lack of social support. See Appendix II (Table E on page 38) for each sport's psychological health rating.

Table 9b: Examining the Influence of Teen Girls' Sport Participation on Psychological Health (Participation in Multiple Sports)

Blue indicates a significant positive impact on the outcome;
Red refers to a significant negative impact on the outcome.

Psychological health (based on a scale from 1 to 5)	Self-esteem (high score = high self-esteem)	Fatalism (high score = high fatalism)	Self-efficacy (high score = high self-efficacy)	Loneliness (high score = high loneliness)	Self-derogation (high score = high self-derogation)	Social support (high score = high social support)	Depression (high score = low level of depression)
Does not participate in sport	3.85	2.34	3.71	3.08	2.39	4.05	3.70
Participates in one sport	**4.00*** **	2.26	3.78	**2.90*** **	**2.20*** **	**4.21*** **	**4.00*** **
Participates in 2+ sports	**4.11*** **	**2.16*** **	**3.86*** **	**2.81*** **	**2.08*** **	**4.22*** **	**4.10*** **

p<.05; p<.01**; p<.001****
Significance tests were based on ordinary least squares regression controlling for age, sex, race, parental education (i.e., socioeconomic status), U.S. region, and urbanicity (see methods section for more details).

Table 9c: Examining the Influence of Teen Girls' Sport Participation on Psychological Health (Participation in Specific Sports)

Blue indicates a significant positive impact on the outcome;
Red refers to a significant negative impact on the outcome.

Overall (based on a scale from 1 to 5)	Self-esteem (high score = high self-esteem)	Fatalism (high score = high fatalism)	Self-efficacy (high score = high self-efficacy)	Loneliness (high score = high loneliness)	Self-derogation (high score = high self-derogation)	Social support (high score = high social support)	Depression (high score = low level of depression)
All respondents	3.97	2.28	3.76	2.95	2.25	4.15	4.15
Does not participate in sport	3.85	2.34	3.71	3.08	2.39	4.05	4.05
Most popular sports							
Basketball	4.16***	2.16*	3.89**	2.74***	2.06**	4.26***	4.04
Volleyball	4.08**	2.17	3.86*	2.88	2.15	4.20	4.03
Soccer	4.06*	2.21	3.76	2.79**	2.12*	4.23*	4.12**
Baseball/ Softball	4.00	2.17*	3.78	2.78**	2.12	4.22	4.08
Track and Field	4.09	2.18	3.83	2.78***	2.07***	4.17	4.04
Cheerleading	4.14***	2.28	3.86**	2.90	2.12*	4.24**	4.19***
Swimming and Diving	4.07	2.22	3.81	2.87	2.19	4.18	4.01
Tennis	4.12***	2.15	3.93**	2.80	2.08*	4.28**	4.20***
Gymnastics	4.13	2.30	3.81	2.90	2.09	4.13	4.04
Weightlifting	4.14	2.23	3.87	2.90	2.19	4.15	3.96
Cross Country	4.08	2.02***	3.85	2.86	2.08	4.21	4.03
Football	4.07	2.36	3.76	3.00**	2.27	3.92***	3.94
Lacrosse	4.18***	2.03	3.94	2.75	1.91***	4.37*	4.33**
Emerging sports/less popular							
Field Hockey	4.03	2.05	3.82	2.71	2.15	4.33	4.23
Golf	4.09	2.23	3.85	2.80	1.99*	4.32	4.29*
Equestrian	4.10*	2.04*	3.90	2.71*	2.02*	4.34*	4.20
Wrestling	3.96	2.60*	3.57	2.96	2.57*	3.97	3.80
Crew	4.08	2.32	3.82	3.13	2.29	4.08	4.02
Ice Hockey	3.93	2.32	3.91	3.08	2.59	4.15	4.01
Water Polo	3.87	2.11	3.71	2.70	2.14	4.13	3.82
Other Sport	4.02	2.31	3.77	3.00	2.28	4.19	3.97

p<.05; p<.01**; p<.001****
Significance tests were based on ordinary least squares regression controlling for age, sex, race, parental education (i.e., socioeconomic status), U.S. region, and urbanicity (see methods section for more details).

Conclusions

This report set out to examine the role of sport in promoting the positive physical, mental, and achievement-related development of teen girls. To this end, the report considers a large number of indicators that have been identified as important factors in preventing obesity and related diseases, promoting physical and psychological health, and supporting educational attainment and occupational success (Biddle & Asare, 2011; Ickovics et al., 2014; World Health Organization, 2016). Our findings provide support for the important role sports participation can play in supporting long-term health, achievement, and well-being in the lives of girls. Compared to non-athletes, girls who play sports are more likely to have a healthier diet/nutrition (i.e., eating breakfast and fruits and vegetables daily, and consuming fewer soft drinks and energy drinks/shots), and get ample daily physical activity and sufficient sleep per night (at least seven hours per night). In addition, our study showed that girls who play sports fare better than non-athletes on multiple markers of academic achievement. Sports participation was related to girls' more positive academic self-concepts, aspirations/expectations, and achievement, and to all seven indices of psychological well-being examined. Given the alarmingly high rates of obesity, inactivity, sleep deprivation, and poor mental health of today's teens (Bitsko et al., 2018; Kann et al., 2018; World Health Organization, 2016), sports participation and the support it provides for the promotion of positive health and development may be more important now than ever before.

Findings from this report also point to the additional benefits girls can gain when they participate in more than one sport. Across all areas of teen girls' health, academic achievement, and psychological well-being, we found that girls who participated in more than one sport benefitted more from their participation than those who focused on a single sport. In some instances, including consumption of soft drinks, marijuana use, self-perceptions of intelligence, cutting class, self-efficacy,

and fatalism, sport participation was linked to more positive outcomes only among girls who participate in at least two sports. Participation in multiple sports is believed to expose youth to a fuller range of experiences, reinforce important skills for positive development and to offer youth greater opportunities to contribute and build supportive relationships with a variety of positive adults and peers. It is also proposed that participation in multiple sports functions to buffer youth against possible negative experiences in one of their sport contexts or in other influential contexts in their lives (Zarrett et al., 2009; Bohnert et al., 2010).

This study is the first to provide a sport-by-sport analysis and assessment that determines how different sports support girls' well-being. Findings indicate that each sport can have a unique impact on girls' achievement, health, and well-being. Several sports are particularly effective in promoting girls' healthy development across all key areas of well-being. Girls who participated in tennis, track and field, soccer, equestrian, and cross country appeared to fare best across the multiple indicators of positive health and well-being measured. In addition, girls in basketball were particularly noteworthy for being more likely than the rest of the sample to perform well on all the measures of psychological well-being in the study and reported lower cigarette use, while girls in volleyball ranked highest across academic achievement indicators along with being more likely to obtain ample physical activity and rest.

There are other sports that provide unique support in some but not all areas of girls' well-being and are linked with little to no risks. For example, weightlifting participants were more likely than non-athletes and athletes in other sports to have a healthy diet (eats fruits/vegetables and breakfast daily), ample physical activity and rest, and average levels of health in all other categories examined. Findings also identified a set of sports that contribute positively to at least one facet of well-being but can benefit from improvement in some areas. For example, girls participating in softball/baseball were more likely than the rest of the sample to get adequate physical activity and rest but had poorer academic self-concepts and the lowest ratings for diet and nutrition. Similarly, cheerleading had one of the highest ratings for academic achievement/aspirations and psychological health, and lacrosse had positive psychological health ratings, but both were noted as the only two sports related to a greater likelihood of alcohol binge drinking.

Lastly, findings identified a few sports that have particularly low total ratings and can benefit from improvements/intervention across multiple areas of well-being. For example, football was linked to a greater likelihood to smoke cigarettes and had the lowest academic ratings and the lowest psychological health ratings of the sample group. Ice hockey also was rated low because of the greater likelihood for girls in this

sport to smoke cigarettes, consume energy shots, and have lower academic aspirations (i.e., graduate from a four-year college). Lastly, wrestling's low total rating score was largely driven by significantly lower psychological health (i.e., fatalism and self-derogation) and some poor diet behaviors (i.e., less likely to eat breakfast daily, and higher consumption of energy shots). See Appendix II on page 34 for a summary of all sport-by-sport analyses and overall ratings.

Comparing the current report's findings that focused solely on girls with that of the larger, mixed-gender sample of the 2018 *Teen Sport in America: Why Participation Matters Report* also enables us to draw conclusions about the differences in the ways boys and girls benefit from sport. Overall, findings from the current report align with those of the full, mixed-gender sample in the 2018 Teen Sport Report, both of which show that sports can be a critical asset to American teens, having a highly positive influence on their academic achievement, physical health, and psychological well-being. However, there were some notable differences in the current report, which focused solely on girls' participation, that suggest that girls may reap greater benefits from sports than boys do.

In particular, the influence of sports participation on substance use differed considerably from the full sample of the 2018 Teen Sport Report in several ways (see Tables 7a and 7b on page 16). The 2018 report full sample (that included both boys and girls) found that sports participation was a risk factor for alcohol binge drinking, was neither protective or a risk for marijuana use, and only protective against smoking cigarettes for youth who participated in at least two sports. In contrast, the current Girls' Teen Sport Report, indicated that for girls, sports is protective for both cigarette (even for those who participated in one sport) and marijuana

use (with participation in two or more sports) and not a risk factor for alcohol binge drinking (i.e., there were no differences between female athletes and non-athletes; see Table 7b). For the sport-by-sport analyses, track and field, cross country, tennis, soccer, and equestrian were found to be protective against substance use across both reports. In addition, for the current report's girl-specific sample, basketball was also identified as particularly protective against smoking cigarettes. Among sports that were associated with higher risk for substance use, ice hockey, lacrosse, and football were identified as high-risk sports for both boys and girls. For the current report's girl-specific sample, cheerleading also was identified as a risk factor for binge drinking. However, other sports identified as risk factors in the 2018 report, like wrestling, crew, and weightlifting, were not risk factors for girls specifically.

Overall, findings suggest that sport participation influences substance use behaviors differently, and on average, in more positive/protective ways, for girls than for boys. These findings lend further support to earlier work suggesting that some of the negative health behaviors that have been associated with sports participation (e.g., alcohol use/abuse) are more common within male sport culture and socialization experiences and are less normative for girls' sport culture (Eccles et al., 2003). These differences may be due, at least in part, to the different ways boys and girls are socialized in sport. Aligned with literature on the masculinization of sport, especially the masculinization of contact sports (Veliz et al., 2015), it is likely more common for boys to be socialized to view pain, violence, and risk as normative features within the sporting context and, thus, see their body as an instrument that can be easily gambled with, even if it means permanent damage (i.e., the body is a means to an end). Consequently, such socialization has been shown to influence risky behavior off the playing field (Veliz et al., 2015). In contrast, girls are more likely to be socialized to value moderation and self-control in order to cultivate long-term health and continued high performance (i.e., the body is an end in itself) (Miller et al., 1998; Sabo et al., 2002; Veliz et al., 2015; Veliz et al., 2017). This type of strategic orientation to maintain a level of fitness for both competition and future longevity has been associated with less risky behaviors off the playing field in the service of cultivating and preserving health and high performance for the sport.

There were also notable differences in the other indicators of health and well-being measured. For academics, girls also appear to benefit more than boys from their participation in sports. For instance, sports were found to play a protective role in girls' cutting class or absences due to illness, where in the full 2018 Teen Report sample that included boys, we did not find any differences on measures of truancy, skipping class, and absence due to illness. Volleyball, which did not benefit boys' academic achievement in the 2018 Teen Report (i.e., linked to average achievement), stood out as particularly supportive for academics in this girl-specific sample. Likewise, other sports that were rated less favorably in the 2018 report were either average in ratings (i.e., water polo, wrestling) or appear to be particularly supportive for girls' academic achievement (i.e., lacrosse) in the current Teen Girls' Report. There was only one instance in which a sport appears to favor boys' achievement over that of girls': softball/baseball, which was ranked particularly high in some areas of achievement in the 2018 full-sample report, was rated lower in the current girl-specific report.

For psychological health, youth who participate in the most popular sports appear to fare best in psychological health compared to youth in other sports and non-athletes. However, some of the sports deemed popular for girls differ from those for boys. Although basketball, soccer, tennis, track and field, and softball/baseball were sports identified as beneficial for psychological health across both reports, the current girl-specific report also included cheerleading, equestrian, and lacrosse. Further, football, which was found to be highly supportive of psychological health in the 2018 full-sample, Teen Sport Report because of its popularity and associated status among males, was identified as particularly high in risk for poor psychological health in our girl-specific sample. In particular, girls in football were more likely to report loneliness and lack of social support. Given football has been historically characterized as one of the most masculinized sports in American culture, these findings may be reflective of the barriers (e.g., lack of inclusion, sense of belonging, possible teasing from peers, internalization and/or peer conformity to traditional gender norms) girls in more masculinized sports may encounter and the consequences this may have on their psychological health. Wrestling, another highly masculinized sport, also was found to be a risk factor for girls' psychological health. However, since wrestling was found to be low in psychological health in the 2018 full-sample report that included boys, it is difficult to disentangle whether it is due to the barriers associated with the masculinization of the sport or to other cultural factors unique to the sport of wrestling.

Overall findings point to sports as being a critical asset to girls' development, having a highly positive influence on their academic achievement, physical health, and psychological well-being. Given the important benefits that girls gain from sport, the significant variations observed in girls' sports participation by race, ethnicity, urbanicity, and family income is concerning. Black and Hispanic girls and girls from low-income families are still participating at significantly lower rates than white girls, and girls from higher-income backgrounds. There were also clear differences in the racial/ethnic composition of each sport type. These findings indicate equitable access and opportunities for girls in sport remains a challenge and highlights the dire need for further attention towards improving equity and diversity within sports. Additionally, the current report looked at average effects of sports on

girls' health and well-being (controlling for differences by family income, race/ethnicity, etc.). However, some research has suggested that supportive developmental activities, like sports, can play a compensatory role and thus, will be more beneficial to youth with limited family resources or other challenges/barriers than more resourced youth (e.g., Vandell et al., 2015). Further research is needed to determine the extent to which sport plays a particularly positive role in the lives of girls who are under-resourced and/or underrepresented in sport.

Moreover, the health behaviors measured in the current report have been identified by multiple national and international health organization as key behaviors for supporting physical health and preventing obesity and related disease (Kann et al., 2018; World Health Organization, 2016). Likewise, the psychological indicators considered in this report have been identified as critical during childhood and adolescence for supporting long-term mental health (e.g., Babiss & Gangwisch, 2009; Caprara et al., 2006). However, additional research is needed to consider the unique influence of different sports on other indicators of health and well-being that are also relevant to girls. For example, although sports have been shown to promote a positive body image among female athletes (Zarrett et al., 2019), the culture of certain sports, including gymnastics, running, wrestling, figure skating, ballet, and light-weight rowing, which emphasize leanness, aesthetics, a weight class, or endurance, have been linked to heightened risk for girls' poor body image and detrimental health behaviors such as disordered eating and excessive exercise (Bratland-Sanda & Sundgot-Borgen, 2013; Nazem & Ackerman, 2012; Sabiston et al., 2019; Slater & Tiggemann, 2011). Future work will need to consider the way each sport culture contributes to these additional critical aspects of mental and physical health to get a more comprehensive understanding of the role of sport in girls' lives.

Implications/Policy Recommendations

Increase Girls' Participation in Sports

Rationale: Sports remain the primary way girls can get the recommended physical activity of 60 minutes per day and has other potential benefits. But the data from this study show that more than 40% of teen girls do not participate in sports at all.

Recommendation 1: Prioritize increasing girls' participation in sports and physical activity, with significant input from girls about developing and implementing solutions. Ways to do this include:

- establishing national, state, and local government efforts to monitor and promote sports participation;
- funding, supporting, and implementing research to identify the barriers to sports participation and physical activity across different communities and populations and how to overcome them; and
- once barriers and solutions are identified, establishing/identifying programs to execute strategic solutions. This should include research that looks at multiple factors impacting sports participation across race/ethnicity and socioeconomic status, and ensuring use of advanced research methods and data to better understand and inform the systems involved.

Recommendation 2: Involve girls as a priority population in all aspects of Recommendation 1, including having girls participate in the research and decision-making process. It will be important to determine which barriers are specific to girls and which ones are more common in particular socioeconomic groups or exist across all youth to determine the strategies needed to overcome them.

Recommendation 3: Ensure gender equity in opportunities to participate in sports. Ways to do this include:

- offering the same sports, programs, and facilities to both genders;
- creating a comparable culture for sports participation for all youth, which includes changing social norms so it's more accepted and encouraged for girls to play sports;
- providing mentorship, peer support, and awareness programs; establishing female coaches and role models; educating parents and school officials; and increasing the presence and images of women playing sports in various types of media;
- looking for ways in which gender stereotypes can be removed from sports (i.e., cheerleading is often characterized by short skirts/ revealing clothing); and
- identifying ways to adjust the culture, composition, and operations of sports to make them more accepting of girls. Examples include making the leadership and coaching of different sports more diverse; removing rituals and behaviors that consciously or unconsciously exclude girls, such as hazing; adjusting schedules, equipment, uniforms, and rules that may be barriers; reimagining high school rituals connected to sport that have embedded gender norms (i.e., pep rallies, homecoming) and editing promotional and instructional materials to reflect diversity.

Encourage Participation in Multiple Sports

Rationale: Participating in more than one sport increases protective health benefits, but only 26.3% of teen girls participate in more than one sport. Involvement in multiple, diverse sports can help broaden skill sets and, as a result, improve achievement in sports and other areas of life.

Recommendation 4: Educate youth, parents, schools, and coaches on the benefits of playing multiple sports as well as the hazards of focusing on one sport too early, which includes higher risk of injury. There are a number of ways to do this, including:

- funding, supporting, and implementing research to determine the barriers to multi-sport participation in different communities, school types and sizes, and populations, and designing and developing strategies to overcome these barriers;
- increasing availability of equipment, facilities, and coaches for a wider variety of sports;
- placing limits on the lengths of seasons and practice times for a given sport: Longer and overlapping seasons and practice sessions make it more difficult for youth to participate in multiple sports; and
- limiting early scouting and programs that track youth into a single sport at an early age.

Decrease Attrition from Sports

Rationale: The average attrition of girls across the 20 sports between the eighth and 12th grades was an 29.6%.

Recommendation 5: Fund, support, and implement research to determine the causes of athletic attrition in different communities and populations. This should include evaluating multiple contributing factors, such as cost of transportation, sports involvement, injuries, lack of family or social support, lack of mentorship or opportunities, and sports becoming less fun or enjoyable as they become more competitive, and cultural norms that can persist/change in high school. Special attention also should be paid to injury prevention.

Recommendation 6: Make it easier for girls to play sports and stick with it. Strategies for doing this include:

- expanding the number of available sports to include those not traditionally offered, including emerging and non-competitive sports such as yoga and hiking; this will give teen girls more options to engage in physical activity;
- enhancing opportunities for girls to play sports at the non-varsity level, such as junior varsity, club, and recreational sports;
- increasing the number and size of varsity teams;
- requiring schools to provide physical education (PE) classes, ensuring that schools adhere to mandated PE requirements, advocating for mandating more hours of PE and considering counting PE toward a student's GPA, for which grades would not be based on athleticism, but rather on participation;

- improving the quality of physical education classes so they not only serve as feeders to competitive sports teams but provide opportunities, training, and education for those who remain recreational athletes;
- conducting more multi-faceted research to further establish the link between PE, academic performance, and other current and future success;
- coordinating sports schedules with other competing demands so teen girls don't have to choose between playing sports and participating in other activities such as academics, music, drama, or work, and don't experience burnout, also establishing recommendations or regulations for practice and training time for sports; and
- making fields, courts, and other locations available to recreational sports, in addition to formal team activities.

Prevent Unhealthy Behaviors Associated with Certain Sports

Rationale: While sports participation is associated with a number of healthy behaviors, certain unhealthy behaviors, such as alcohol use and binge drinking, are also linked to sports participation, especially with certain sports.

Recommendation 7: Fund, support, and implement research to determine the causes of links between participation in different types of sports and unhealthy behaviors, academic performance issues, and psychological issues, and develop potential sport-specific strategies to reduce those risks. The research should address not only sports but other issues that may contribute to unhealthy behaviors, such as surrounding community structure and influence, economic hardship, social/emotional and psychological stress, bullying, and discrimination. Related steps include:

- establishing education, surveillance, and early intervention programs to identify and help teen girls who may be at risk for these unhealthy behaviors;
- making fundamental changes in the structure and culture of particular sports to reduce the risk of unhealthy behaviors: For example, a critical point of intervention would target girls in contact sports, such as football, wrestling, and ice hockey, given their higher likelihood of engaging in substance use, along with some of the other academic and psychological challenges associated with participation; and
- providing wrap-around services that connect sports programming with mental health, substance abuse prevention/early intervention and other services to ensure that teen girls receive holistic supports.

Develop More Tailored Approaches to Increasing Sports Participation

Rationale: The study found significant variation in results for different sports and various populations. Although the study looked at different demographic groups, it did not closely examine groups such as Asian Americans and Native Americans.

Recommendation 8: Consider all of the recommendations in this report on a sport-by-sport basis. Some general principles may apply across all sports, but different sports have their unique strengths and challenges, so treating all sports as a single entity may overlook these variations.

Recommendation 9: For all of the above recommendations, explore, evaluate, and address populations and demographics that have been overlooked, including races and ethnicities that have not been well-studied and other emerging demographics, working with key advisors from these communities to drive/inform this research. Fund, support, and implement research to do this work.

Appendix I: Measures Index

Measures for Sport Participation

Question: In which competitive sports (if any) did you participate during the LAST 12 MONTHS? Include school, community, and other organized sports. (Mark all that apply.)

(1) Baseball/Softball
(2) Basketball
(3) Cheerleading
(4) Cross Country
(5) Football
(6) Golf
(7) Lacrosse
(8) Soccer
(9) Swimming and Diving
(10) Tennis
(11) Track and Field
(12) Volleyball
(13) Wrestling
(14) Crew
(15) Equestrian
(16) Field Hockey
(17) Gymnastics
(18) Ice Hockey
(19) Water Polo
(20) Weightlifting
(21) Other Sport

Participates in at least one sport: if a respondent marked at least 1 of the 2 sports listed.

Number of sports: if a respondent only marked one of the sports (participates in only one sport); if a respondent marked two or more of the sports (participates in two or more sports).

Measures for Diet and Nutrition

Question: How often do you ...
(1) Eat breakfast?
(2) Eat at least some green vegetables?
(3) Eat at least some fruit?

Response options: Never, Seldom, Most Days, Nearly Every Day, Every Day – RECODED [Never, Seldom, Most Days = 0; Nearly Every Day, Every Day = 1]

Question: Regular (non-diet) soft drinks include Coke, Pepsi, Mountain Dew, Dr. Pepper, etc. How many (if any) 12-ounce cans or bottles (or the equivalent) of regular (non-diet) soft drinks do you drink PER DAY, on average?

Response options: 0="None" 1="Less than 1" 2="One" 3="Two" 4="Three" 5="Four" 6="Five or six" 7="7 or more" – RECODED [None = 0; Less than 1, One, Two, Three, Four, Five or six, 7 or more = 1]

Question: "Energy drinks" are non-alcoholic beverages that usually contain high amounts of caffeine, including such drinks as Red Bull, Full Throttle, Monster, and Rockstar. They are usually sold in 8- or 16-ounce cans or bottles. About how many (if any) energy drinks do you drink PER DAY, on average?

Response options: 0="None" 1="Less than 1" 2="One" 3="Two" 4="Three" 5="Four" 6="Five or six" 7="7 or more" – RECODED [None = 0; Less than 1, One, Two, Three, Four, Five or six, 7 or more = 1]

Question: Energy drinks are also sold as small "shots", that usually contain just 2 or 3 ounces. How many (if any) energy drink shots do you drink PER DAY, on average?

Response options: 0="None" 1="Less than 1" 2="One" 3="Two" 4="Three" 5="Four" 6="Five or six" 7="7 or more" – RECODED [None = 0; Less than 1, One, Two, Three, Four, Five or six, 7 or more = 1]

Measures for Physical Activity and Rest

Question: How often do you...
(1) Exercise vigorously (jogging, swimming, calisthenics, or any other active sports)?
(2) Get at least seven hours of sleep?

Response options: Never, Seldom, Most Days, Nearly Every Day, Every Day – RECODED [Never, Seldom, Most Days = 0; Nearly Every Day, Every Day = 1]

Question: During the LAST 7 DAYS, on how many days were you physically active for a total of at least 60 minutes per day? (Add up all the time you spent in any kind of physical activity that increased your heart rate and made you get out of breath some of the time.)

Response options: 0="0 days" 1="1 day" 2="2 days" 3="3 days" 4="4 days" 5="5 days" 6="6 days" 7="7 days" – RECODED [0 days = 0; 1 day, 2 days, 3 days, 4 days, 5 days, 6 days, 7 days = 1]

Measures for Substance Use

Question: How frequently have you smoked cigarettes during the past 30 days?

Response options: 1="Not at all" 2="Less than one cigarette per day" 3="One to five cigarettes per day" 4="About one-half pack per day" 5="About one pack per day" 6="About one and one-half packs per day" 7="Two packs or more per day" – RECODED [Not at all = 0; Less than one cigarette per day, One to five cigarettes per day, About one-half pack per day, About one pack per day, About one and one-half packs per day, Two packs or more per day = 1]

Question: Think back over the LAST TWO WEEKS. How many times have you had five or more drinks in a row? (A "drink" is a glass of wine, a bottle of beer, a shot glass of liquor, a mixed drink, etc.)

Response options: 1="None" 2="Once" 3="Twice" 4="3 to 5 times" 5="6 to 9 times" 6="10 or more times" – RECODED [None = 0; Once, Twice, 3 to 5 times, 6 to 9 times, 10 or more times = 1]

Question: On how many occasions (if any) have you used marijuana (weed, pot) or hashish (hash, hash oil)...

Response options: 1="0 Occasions" 2="1-2 Occasions" 3="3-5 Occasions" 4="6-9 Occasions" 5="10-19 Occasions" 6="20-39 Occasions" 7="40 or More" – RECODED [0 Occasions = 0; 1-2 Occasions, 3-5 Occasions, 6-9 Occasions, 10-19 Occasions, 20-39 Occasions, 40 or More = 1]

Measures for Academic Achievement

Question: Compared with others your age throughout the country, how do you rate yourself on school ability?

Response options: 1="Far Below Average" 2="Below Average" 3="Slightly Below Average" 4="Average" 5="Slightly Above Average" 6="Above Average" 7="Far Above Average" – RECODED [Far Below Average, Below Average, Slightly Below Average, Average, Slightly Above Average = 0; Above Average, Far Above Average = 1]

Question: How intelligent do you think you are compared with others your age?

Response options: 1="Far Below Average" 2="Below Average" 3="Slightly Below Average" 4="Average" 5="Slightly Above Average" 6="Above Average" 7="Far Above Average" – RECODED [Far Below Average, Below Average, Slightly Below Average, Average, Slightly Above Average = 0; Above Average, Far Above Average = 1]

Question: During the LAST FOUR WEEKS, how many whole days of school have you missed...
(1) . . . Because you skipped or "cut"?
(2) . . . Because of illness?

Response options: 1="None" 2="1 Day" 3="2 Days" 4="3 Days" 5="4-5 Days" 6="6-10 Days" 7="11 or More" – RECODED [None = 0; 1 Day, 2 Days, 3 Days, 4-5 Days, 6-10 Days, 11 or More = 1]

Question: During the LAST FOUR WEEKS, how often have you gone to school, but skipped a class when you weren't supposed to?

Response options: 1="Not at all" 2="1 or 2 times" 3="3-5 times" 4="6-10 times" 5="11-20 times" 6="More than 20 times" – RECODED [Not at all = 0; 1 or 2 times, 3-5 times, 6-10 times, 11-20 times, More than 20 times = 1]

Question: Which of the following best describes your average grade so far in high school?

Response options: 9="A (93-100)" 8="A- (90-92)" 7="B+ (87-89)" 6="B (83-86)" 5="B- (80-82)" 4="C+ (77-79)" 3="C (73-76)" 2="C- (70-72)" 1="D (69 or below)" – RECODED [Not at all, B+ (87-89), B (83-86), B- (80-82), C+ (77-79) , C (73-76), C- (70-72), D (69 or below) = 0; A (93-100), A- (90-92) = 1]

Question: How likely is it that you will do each of the following things after high school?
(1) Graduate from college (four-year program)
(2) Attend graduate or professional school after college

Response options: 1="Definitely Won't" 2="Probably Won't" 3="Probably Will" 4="Definitely Will" – RECODED [Definitely Won't, Probably Won't, Probably Will = 0; Definitely Will = 1]

Question: Suppose you could do just what you'd like and nothing stood in your way. How many of the following things would you WANT to do? (Mark all that apply.)
(1) Graduate from college (four-year program)
(2) Attend graduate or professional school after college

Response options: 0="Unmarked" 1="Marked" – RECODED [Unmarked = 0; Marked = 1]

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Measures for Psychological Health

SELF-ESTEEM Question: Do you agree or disagree with each of the following? [NOTE: the combined construct of the four items for has an alpha of .831]
(1) On the whole, I'm satisfied with myself
(2) I take a positive attitude toward myself
(3) I feel I am a person of worth, on an equal plane with others
(4) I am able to do things as well as most other people

Response options: 1="Disagree" 2="Mostly Disagree" 3="Neither" 4="Mostly Agree" 5="Agree" – RECODED [Disagree, Mostly Disagree, Neither = 0; Mostly Agree, Agree = 1]

FATALISM Question: Do you agree or disagree with each of the following? [NOTE: the combined construct of the two items has an alpha of .571]
(1) Every time I try to get ahead, something or somebody stops me
(2) People like me don't have much of a chance to be successful in life

Response options: 1="Disagree" 2="Mostly Disagree" 3="Neither" 4="Mostly Agree" 5="Agree" – RECODED [Disagree, Mostly Disagree, Neither = 0; Mostly Agree, Agree = 1]

SELF-EFFICACY Question: Do you agree or disagree with each of the following? [NOTE: the combined construct of the three items has an alpha of .566]
(1) Planning only makes a person unhappy since plans hardly ever work out anyway
(2) When I make plans, I am almost certain that I can make them work
(3) Planning ahead makes things turn out better

Response options: 1="Disagree" 2="Mostly Disagree" 3="Neither" 4="Mostly Agree" 5="Agree" – RECODED [Disagree, Mostly Disagree, Neither = 0; Mostly Agree, Agree = 1]

LONELINESS Question: Do you agree or disagree with each of the following? [NOTE: the combined construct of the three items has an alpha of .748]
(1) A lot of times I feel lonely
(2) I often feel left out of things
(3) I often wish I had more good friends

Response options: 1="Disagree" 2="Mostly Disagree" 3="Neither" 4="Mostly Agree" 5="Agree" – RECODED [Disagree, Mostly Disagree, Neither = 0; Mostly Agree, Agree = 1]

ELF-DEROGATION Question: Do you agree or disagree with each of the following? [NOTE: the combined construct of the four items has an alpha of .871]
(1) Sometimes I think that I am no good at all
(2) I feel I do not have much to be proud of
(3) I feel that I can't do anything right
(4) I feel that my life is not very useful

Response options: 1="Disagree" 2="Mostly Disagree" 3="Neither" 4="Mostly Agree" 5="Agree" – RECODED [Disagree, Mostly Disagree, Neither = 0; Mostly Agree, Agree = 1]

SOCIAL SUPPORT Question: Do you agree or disagree with each of the following? [NOTE: the combined construct of the three items has an alpha of .759]
(1) There is always someone I can turn to if I need help
(2) There is usually someone I can talk to if I need to
(3) I usually have a few friends around that I can get together with

Response options: 1="Disagree" 2="Mostly Disagree" 3="Neither" 4="Mostly Agree" 5="Agree" – RECODED [Disagree, Mostly Disagree, Neither = 0; Mostly Agree, Agree = 1]

Appendix II: Report Cards

Table A: Teen Girls' Diet and Nutrition Report Card

	Eats breakfast every day	Eats green vegetables every day	Eats fruit every day	Has at least one soft drink per day	Has at least one energy drink per day	Has at least one energy shot per day	Total score
Participate in sports	+	+	+	+	avg.	avg.	10
Cross Country	+	avg.	+	+	avg.	+	10
Tennis	+	+	+	+	avg.	avg.	10
Track and Field	+	+	+	+	avg.	avg.	10
Weight Lifting	+	+	+	avg.	avg.	avg.	9
Lacrosse	+	avg.	+	avg.	avg.	avg.	8
Soccer	avg.	+	+	avg.	avg.	avg.	8
Volleyball	avg.	+	+	avg.	avg.	avg.	8
Crew	avg.	+	avg.	+	avg.	avg.	8
Equestrian	avg.	+	+	avg.	avg.	avg.	8
Other Sport	avg.	avg.	+	avg.	avg.	avg.	7
Basketball	avg.	avg.	avg.	avg.	avg.	avg.	6
Cheerleading	avg.	avg.	avg.	avg.	avg.	avg.	6
Football	avg.	avg.	avg.	avg.	avg.	avg.	6
Golf	avg.	avg.	avg.	avg.	avg.	avg.	6
Field Hockey	avg.	avg.	avg.	avg.	avg.	avg.	6
Gymnastics	avg.	avg.	avg.	avg.	avg.	avg.	6
Water Polo	avg.	avg.	avg.	avg.	avg.	avg.	6
Swimming and Diving	avg.	avg.	+	avg.	-	avg.	5
Ice Hockey	avg.	avg.	avg.	avg.	avg.	-	5
Wrestling	-	avg.	avg.	avg.	avg.	-	4
Baseball/Softball	-	-	avg.	-	-	-	1

Key: "-" = Below average [score = 0]; "avg." = Average [score = 1]; "+" = Above average [score = 2]
Significance tests control for age, sex, race, parental education (i.e., socioeconomic status), U.S. region, and urbanicity.

Table B: Teen Girls' Physical Activity and Rest Report Card

	Exercises vigorously every day	Exercises 7 days a week	Gets 7 hours of sleep every day	Total score
Participate in sports	+	+	+	6
Baseball/Softball	+	+	+	6
Soccer	+	+	+	6
Cross Country	+	avg.	+	5
Lacrosse	+	+	avg.	5
Track and Field	+	+	avg.	5
Volleyball	+	avg.	+	5
Equestrian	avg.	+	+	5
Weight Lifting	+	avg.	+	5
Basketball	+	avg.	avg.	4
Cheerleading	+	avg.	avg.	4
Tennis	+	avg.	avg.	4
Water Polo	+	avg.	avg.	4
Football	avg.	avg.	avg.	3
Golf	avg.	avg.	avg.	3
Swimming and Diving	avg.	avg.	avg.	3
Wrestling	avg.	avg.	avg.	3
Crew	avg.	avg.	avg.	3
Field Hockey	avg.	avg.	avg.	3
Gymnastics	avg.	avg.	avg.	3
Ice Hockey	avg.	avg.	avg.	3
Other Sport	+	avg.	–	3

Key: "–" = Below average [score = 0]; "avg." = Average [score = 1]; "+" = Above average [score = 2]
Significance tests control for age, sex, race, parental education (i.e., socioeconomic status), U.S. region, and urbanicity.

Table C: Teen Girls' Substance Use Report Card

	Past 30-day cigarette use	Past 2-week binge drinking	Past 30-day marijuana use	Total score
Participate in sports	+	avg.	+	5
Other Sport	+	+	+	6
Basketball	+	avg.	avg.	4
Cross Country	avg.	avg.	+	4
Soccer	+	avg.	avg.	4
Tennis	avg.	avg.	+	4
Track and Field	+	avg.	avg.	4
Equestrian	avg.	+	avg.	4
Baseball/Softball	avg.	avg.	avg.	3
Golf	avg.	avg.	avg.	3
Swimming and Diving	avg.	avg.	avg.	3
Volleyball	avg.	avg.	avg.	3
Wrestling	avg.	avg.	avg.	3
Crew	avg.	avg.	avg.	3
Field Hockey	avg.	avg.	avg.	3
Gymnastics	avg.	avg.	avg.	3
Water Polo	avg.	avg.	avg.	3
Weight Lifting	avg.	avg.	avg.	3
Cheerleading	avg.	-	avg.	2
Football	-	avg.	avg.	2
Lacrosse	avg.	-	avg.	2
Ice Hockey	-	avg.	avg.	2

Key: "-" = Below average [score = 0]; "avg." = Average [score = 1]; "+" = Above average [score = 2]
Significance tests control for age, sex, race, parental education (i.e., socioeconomic status), U.S. region, and urbanicity.

Table D: Teen Girls' Academic Achievement Report Card

	Self-rated school ability above average	Self-rated intelligence above average	Past month cut class (full-day)	Past month missed class due to illness	Past month skipped class (partial)	Average grade in school A or A-	Will graduate from a four-year college	Will attend graduate or professional school	Total score
Participate in sports	+	avg.	avg.	+	avg.	+	+	+	13
Volleyball	+	+	avg.	avg.	avg.	+	+	+	13
Tennis	+	+	avg.	avg.	avg.	+	+	avg.	12
Track and Field	+	avg.	avg.	+	avg.	avg.	+	avg.	11
Cheerleading	avg.	avg.	avg.	avg.	avg.	avg.	+	+	10
Cross Country	avg.	avg.	avg.	+	avg.	+	avg.	avg.	10
Lacrosse	avg.	avg.	avg.	avg.	avg.	avg.	+	+	10
Crew	avg.	avg.	+	avg.	avg.	avg.	+	avg.	10
Equestrian	avg.	+	avg.	avg.	+	avg.	avg.	avg.	10
Golf	avg.	avg.	avg.	avg.	avg.	avg.	avg.	+	9
Soccer	avg.	avg.	avg.	avg.	avg.	avg.	+	avg.	9
Field Hockey	avg.	avg.	avg.	avg.	avg.	avg.	+	avg.	9
Water Polo	+	avg.	avg.	avg.	avg.	avg.	avg.	avg.	9
Other Sport	avg.	avg.	avg.	avg.	avg.	avg.	avg.	+	9
Basketball	avg.	avg.	avg.	avg.	avg.	avg.	avg.	avg.	8
Swimming and Diving	avg.	avg.	avg.	avg.	avg.	avg.	avg.	avg.	8
Wrestling	avg.	avg.	avg.	avg.	avg.	avg.	avg.	avg.	8
Gymnastics	avg.	avg.	avg.	avg.	avg.	avg.	avg.	avg.	8
Weight Lifting	avg.	avg.	avg.	avg.	avg.	avg.	avg.	avg.	8
Baseball/ Softball	avg.	-	avg.	avg.	avg.	avg.	avg.	avg.	7
Ice Hockey	avg.	avg.	avg.	avg.	avg.	avg.	-	avg.	7
Football	-	avg.	avg.	avg.	avg.	-	-	-	4

Key: "-" = Below average [score = 0]; "avg." = Average [score = 1]; "+" = Above average [score = 2]
Significance tests control for age, sex, race, parental education (i.e., socioeconomic status), U.S. region, and urbanicity.

Table E: Teen Girls' Psychological Health Report Card

	Self-Esteem	Fatalism	Self-Efficacy	Loneliness	Self-Derogation	Social Support	Depression	Total Score
Participate in Sports	+	+	+	+	+	+	+	14
Basketball	+	+	+	+	+	+	avg.	13
Cheerleading	+	avg.	+	avg.	+	+	+	12
Soccer	+	avg.	avg.	+	+	+	+	12
Tennis	+	avg.	+	avg.	+	+	+	12
Equestrian	+	+	avg.	+	+	+	avg.	12
Lacrosse	+	avg.	avg.	avg.	+	+	+	11
Baseball/Softball	avg.	+	avg.	+	avg.	avg.	avg.	9
Golf	avg.	avg.	avg.	avg.	+	avg.	+	9
Track and Field	avg.	avg.	avg.	+	+	avg.	avg.	9
Volleyball	+	avg.	+	avg.	avg.	avg.	avg.	9
Cross Country	avg.	+	avg.	avg.	avg.	avg.	avg.	8
Swimming and Diving	avg.	avg.	avg.	avg.	avg.	avg.	avg.	7
Crew	avg.	avg.	avg.	avg.	avg.	avg.	avg.	7
Field Hockey	avg.	avg.	avg.	avg.	avg.	avg.	avg.	7
Gymnastics	avg.	avg.	avg.	avg.	avg.	avg.	avg.	7
Ice Hockey	avg.	avg.	avg.	avg.	avg.	avg.	avg.	7
Water Polo	avg.	avg.	avg.	avg.	avg.	avg.	avg.	7
Weight Lifting	avg.	avg.	avg.	avg.	avg.	avg.	avg.	7
Other Sport	avg.	avg.	avg.	avg.	avg.	avg.	avg.	7
Football	avg.	avg.	avg.	–	avg.	–	avg.	5
Wrestling	avg.	–	avg.	avg.	–	avg.	avg.	5

Key: '–' = Below average [score = 0]; 'avg.' = Average [score = 1]; '+' = Above average [score = 2]
Significance tests control for age, sex, race, parental education (i.e., socioeconomic status), U.S. region, and urbanicity.

Table F: Teen Girls' Overall Report Card

	Total Score
Tennis	41
Track and Field	40
Soccer	39
Equestrian	39
Volleyball	38
Cross Country	37
Lacrosse	36
Basketball	34
Cheerleading	34
Weight Lifting	32
Other Sport	32
Crew	31
Golf	30
Water Polo	29
Field Hockey	28
Gymnastics	27
Baseball/Softball	26
Swimming and Diving	26
Ice Hockey	24
Wrestling	23
Football	20

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