PLAYING WELL

Organized Sports and the Health of Children and Youth

By Ann Rosewater

Prepared for Team-Up for Youth

May 2010

TEAM-UP FOR YOUTH®

Team-Up for Youth® dedicates this monograph series to our after-school partners, who consistently work to address the needs of the whole child and the most underserved children. Because of these committed people and organizations building quality sports programs, the kids who need them the most are able to benefit the most.

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The Team-Up for Youth Monograph Series

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FOREWORD

Playing Well is our second monograph in a series about the benefits that youth can derive from participating in organized sports. This report demonstrates that high-quality organized sports can play an essential role in enhancing young people's overall health—physical and mental. The findings in this report are especially timely: inactivity is exacting a heavy toll on young people; child and adolescent overweight and obesity plague our communities. Our recommendations to address these often preventable conditions should engage policymakers, practitioners, parents and others interested in improving children's health.

Our first publication in this series, *Learning to Play and Playing to Learn*, published in 2009, showed that the discipline of sports, interaction with peers and adults, and training in the habits of teamwork, preparation, planning and practice translate into the classroom. They foster and advance educational aspirations and create pathways to educational success. Taken together, these two reports build a powerful and compelling case for ensuring access to high-quality organized sports for all children, especially those from low-income communities, those from communities of color, and girls.

This series arises out of Team-Up for Youth's commitment to the power of sports to enable children from all backgrounds and communities not only to enjoy the game, but to reap real developmental gains from it. For eight years Team-Up for Youth has promoted high-quality organized sports in the after-school and summer hours in the communities where children have had the least access to these critically important opportunities.

We are appreciative of many people who made this report possible. Many well-known researchers contributed to our knowledge base, and several took time out of their busy schedules to join in a daylong meeting to discuss our findings. Please see the appendix for a complete list of researchers who participated in this project. Kaiser Permanente graciously hosted our convening, and the California Endowment contributed its excellent facilities to make the meeting a success. The Annie E. Casey Foundation was instrumental in helping us launch our monograph series.

Playing Well was written by Ann Rosewater, a national expert on public policy affecting families, children and adolescent development. Her research and the insights that grew out of it have shaped this series, beginning with *Learning to Play and Playing to Learn*. We are extremely grateful for our partnership with her.

Developing this monograph and convening also depended on the leadership of Victoria Gevlin, whose rigorous critical thinking and talent for thoughtfulness ensured that we kept our focus on all the report's important themes, never forgetting our commitment to health outcomes for young people. And Susan Kleinman Wallis's initial conception of the monograph series set a strong foundation for our work for this report.

Janet Carter, Executive Director

EXECUTIVE SUMMARY

Organized sports offer children and youth a host of benefits, including improved physical and mental health, but the opportunities for children to participate in sports after school are too few and too limited, especially for children in low-income communities.

Playing Well: Organized Sports and the Health of Children and Youth sews together several threads of research on children and physical activity in organized settings, both school- and community-based. Our analysis of the existing research emphatically demonstrates the value of organized sports for young people's development. The nation faces a serious epidemic of childhood overweight and obesity, contributing to an increase for children in diseases typically associated with adults. At the same time, many children are understandably confused by the array of messages they encounter about eating, exercise and body image. For example, children wanting to lose weight are often encouraged simply to eat less when, in fact, the message they should be hearing is "Exercise enough and eat right."

Participating in after-school sports is an outstanding way for children to accomplish the first of those objectives—getting the exercise they need to stay healthy. Encouraging such positive behavior does more than help individual children live healthier lives: it saves money. The increased incidence of chronic and adult diseases among children adds decades of additional costs and stress to the nation's already expensive and overstressed health care system.

This report highlights the critical importance of getting children and youth to engage regularly in sports activities to advance both their short- and long-term health prospects.

Summary of the Findings

According to the research, participation in high-quality organized sports after school and during the summer has a number of positive effects on children's health. They include:

- Physical activity, including participation in organized sports, produces positive changes in physical health for children and youth. It can reduce fatness, strengthen bones and help maintain a healthy heart and circulatory system.

- Participation in physical activity and sports may have especially positive effects among girls. Studies have demonstrated that girls' physical activity has particularly positive effects on blood pressure and serum triglyceride concentrations, and that it can improve girls' bone health.

- Getting involved in sports in childhood is key to staying involved as a teenager and pursuing physical activity as an adult. After-school sports put children on a lifetime path of physical activity that can result in better health and longer lives. That said, significant gaps in children's participation in sports during the year can halt or reverse health gains.

- Participation in organized activities, including sports, is associated with greater emotional adjustment. Children and teens who engage regularly in organized sports tend to feel more skilled, capable and confident than their peers who do not participate. Girls who routinely play sports or do physical activity also report greater acceptance of their body image.

- Regular engagement in physical activity and sports is generally a positive emotional experience and is protective against certain clinical mental health disorders, including depression and suicidality.

- Participation in organized sports provides protective effects against a range of risk behaviors especially prevalent in adolescence. Girls who play sports are more likely to postpone sexual activity; girls and boys who participate are less likely to smoke or use illegal substances.

The research also reveals a series of challenges and barriers to broader participation by youth in organized sports after school. Among the findings:

- Too few youth—just 26 percent of girls and 44 percent of boys—get the recommended daily 60 minutes of moderate to vigorous physical activity. School-based physical education alone provides insufficient time, highlighting the importance of structured sports and other organized exercise programs after school to help youth obtain the needed intensive dose of health-promoting activity.

● Various individual and community barriers keep certain groups of children—particularly girls from urban or low-income neighborhoods, overweight youth, and children from under-resourced families and communities—from participating in after-school activities, especially sports.

● Organized sports opportunities can overcome some barriers to physical activity, particularly for girls and obese children. Obese children are more likely to get support and opportunities for physical activity in a structured and supervised environment, and once they begin to participate, even those who had believed themselves to be incompetent at sports are more likely to find enjoyment and continue to participate beyond the program.

● Contrary to the notion that children are overscheduled and overcommitted, millions of children engage in no structured activities, including sports, after school. Millions more get insufficient time in organized sports during the structured programs in which they do participate. Low-income communities often lack the social infrastructure to support organized after-school and summer sports programs without assistance. These situations often contribute to these youths' unhealthy eating and other risk behaviors.

Recommendations

These findings demonstrate the need for a variety of measures aimed at increasing youth participation in organized sports after school. Our recommendations include proposals aimed at shaping policy, practice and research on the subject. Policy proposals include:

● Establish more after-school programs for youth, especially programs focused on sports.

● Strengthen the quality of programs by ensuring that federal and state standards for after-school programs include guidelines for incorporating organized sports activities and strongly encourage after-school programs to include a physical activity component of sufficient intensity and duration.

● Expand access to safe and high-quality, organized and supervised sports activities for children in low-income communities, children of color and girls during after-school hours and the summer, when youth are more likely to gain weight and may lose the health benefits accrued from sports participation during the school year.

Practice proposals include:

● Expand the use of volunteer coaches in organized sports programs in low-income communities by recruiting college students, retirees, parents and others in the community.

● Train coaches in strategies to encourage vigorous physical activity and healthy dietary habits.

● Train coaches in strategies to involve children and youth who may be disinclined to join or persist in sports programs.

● Improve techniques for training coaches by incorporating the use of videos, using "train the trainer" models and sharing trainers across programs in a community.

● Establish developmental goals for organized sports programs that include health and specific health-related learning outcomes.

● Engage parents in low-income and immigrant communities to support their children's participation in organized sports programs, especially for girls.

Finally, research proposals include:

● Build an integrated research agenda focused on health-promoting sports for children and youth, aimed at learning more about how physical activity, especially organized sports, interacts with youth eating habits; developing promising strategies for encouraging participation; identifying exemplary models of after-school sports programs; and more.

● Develop new and refine existing measurement tools to better measure the effects of physical activity on children.

● Engage youth and other community members in the design and implementation of research about youth and organized sports.

While the various research studies included in this monograph address different aspects of the issue and use a variety of methods, the overall message of the research is unified and unambiguous: youth participation in organized sports after school is invaluable, providing clear physical and mental health benefits, and helping youth succeed in school and in life. The challenge that the research highlights is to expand the available opportunities so that all children and youth may benefit.

INTRODUCTION

Sports involve people of all ages. For children, organized sports are more than play; their contexts, content and continuity have consequences and meaning beyond the moment. Participation in school and community-based organized sports, especially during the nonschool hours, provides powerful opportunities to enhance physical health, mental health and learning. Yet far too few children and adolescents reap these benefits because they lack opportunities to engage in high-quality organized sports. For all children to realize these essential elements of healthy development, disparities in access to organized sports must be overcome and programs must draw on available knowledge about what can make them most effective.

Playing Well, the second volume in a series about the outcomes of organized sports, seeks to bring greater understanding and attention to how participation affects physical and mental health, particularly for girls and boys living in low-income communities and communities of color. Both physical and mental health are included in this report because they are inextricably linked: each is affected by a complex combination of biological, chemical, genetic and environmental factors.

Given heightened concerns about the dramatic increase in overweight and obesity and the early onset of adult diseases among the nation's children, this inquiry, and the findings and recommendations resulting from it, have taken on increasing urgency. Overweight and obesity are literally weighing down our children's chances for success; giving all youth the chance to get involved in sports can help them beat the odds.

In contrast to general physical activity, organized sports are of special interest because they bring children together regularly, provide opportunities for sustained intense activity, offer adult supervision and, most of all, are fun. As reported in the first monograph of the series, *Learning to Play and Playing to Learn: Organized Sports and Educational Outcomes*, organized sports also create opportunities for peer interaction, teach teamwork and leadership, provide structure and supervision, instill essential lessons about planning and goal setting, and create environments in which coaches can provide mentoring and skill training. These effects, which create pathways to improved educational success, have been especially advantageous for underserved youth.[1]

Sports participation has major long-term health benefits

This report reinforces the critical value of getting children and youth to engage in sports activities to advance not only their educational opportunities but also their long-term health prospects. On the whole, youth participation in organized sports activities outside of the regular school day has beneficial effects on youths' overall health. While the number of studies specifically testing after-school sports interventions is limited, there are demonstrable beneficial effects on key health outcomes.[2] Involvement in intensive structured after-school sports can improve body composition and cardiorespiratory capacity, reduce weight gain and delay the onset of sexual activity (for girls). Participation also has significant effects on body image, self-esteem, sense of mastery and other important social and emotional attributes that contribute to youth adjustment and well-being. Other areas that relate to or grow out of physical and mental health—such as, presence or absence of chronic disease, long-term commitment to physical activity, reproductive health and sexual activity, risk behaviors such as substance abuse and smoking and time spent in sedentary activities—are also positively affected by young peoples' persistent involvement in sports. These beneficial effects generally appear across race, gender and income.

Physical activity does not stand alone; nutrition, family and school contexts matter

In addition to the limited number of studies directly focused on sports and youth's physical health, two other considerations must be kept in mind. First, physical activity does not occur in a vacuum; it interacts in a variety of ways with eating. All other things being equal, for example, sufficient physical activity can reduce obesity; but because diet also significantly affects weight, there is less evidence that changes in physical activity alone can reduce obesity. In addition, children who engage in sustained vigorous activity need to eat enough to get the nutrition they need to stay both healthy and lean.[3]

Second, as we noted in the context of reviewing educational outcomes, there may be important issues of self-selection, affecting who participates in organized sports, that contribute to the research results. For example, children and teens who select to engage in sports may already be healthier than their peers who do not participate. Youth who are already active may be drawn to sports because they come from families that have better health, are more active and pay greater attention to nutrition. And young people with more favorable adjustment are more likely to choose to participate in sports, which may explain some of the positive effects on mental health. Participation may also be affected by the school or community climate as it relates to race and ethnicity, gender and sexual orientation. Another factor to consider is that the children who are less active are the ones most likely to show the greatest benefits from increasing their participation in physical activity and sports.

Concerns have been expressed about the potential for injury when children participate in sports. It is important to identify the risk factors for injury—including excessive involvement, especially when combined with inadequate nutrition; initiation of sports when children are too young; heightened expectations for body image; and unsafe environments or equipment—and to determine and address whether some of these risks affect certain groups disproportionately.

Compared to other forms of physical activity, sports programs offer these unique benefits:

- Bring children together on a consistent basis
- Provide opportunities for sustained intense activity
- Create environments in which coaches can provide mentoring and skill training
- Encourage positive peer interactions that teach teamwork and leadership
- Instill essential lessons about planning and goal setting
- Allow children to master new skills
- Improve the likelihood that participants will be physically active as adults
- Most of all, sports programs are fun

How the report is organized

In this report we synthesize and analyze research findings about the physical and mental health benefits of participation in organized sports activities, factors contributing to these benefits, the prevalence and characteristics of participants and the factors contributing to participation.[i, ii] The report also addresses the adequacy of current programs, in school and outside of it, to meet the federal guidelines for physical activity that focus on both health promotion and disease prevention.[4] Finally, based on the implications of these findings, we make a set of recommendations for policy, practice and future research. We hope that *Playing Well* will foster a nationwide discussion about the role and benefits, as well as the availability and adequacy, of organized health-promoting sports programs for the nation's children and youth in low-income and underserved communities.

FINDINGS

1 Physical activity, including participation in organized sports, produces positive changes in physical health for children and youth. It can reduce fatness, strengthen bones and help maintain a healthy heart and circulatory system.

- Regular participation in physical activity and sports positively affects body composition and weight status.
  - Children who do more vigorous physical activity have higher levels of lean mass, a key component of body composition that indicates fitness.[5,6,7,8]

[i] The report findings build on an extensive review of research literature across multiple disciplines. Jessica Joseph conducted the literature review, "Physical activity/sports participation and health outcomes in children and adolescents: A review of the literature," prepared for Team-Up for Youth, February 2009. We also draw on the literature review related to educational outcomes: Atwood, J.R., "Sports-based youth development: A review of research on the academic achievement and psychosocial development of school-aged children who participate in PE and sports programs," prepared for Team-Up for Youth, 2008. See the appendix for a discussion of research issues.

[ii] In addition to the literature review noted above, the report is based on interviews conducted with leading experts in public health, medicine, kinesiology and child and adolescent development, and a convening of academics, practitioners, policymakers and funders to review findings and discuss their implications for future policy, practice and research. All interviews cited in this document were conducted by the author primarily from July–September 2009; the findings also draw on interviews conducted by the author in 2008 during the preparation of *Learning to Play and Playing to Learn*. See the appendix for a list of interviewees and convening participants.

- Several experimental studies conducted in the United States demonstrate that participation in physical activity and sports tends to reduce the risk of overweight.[9,10]

- In the FitKid Project, children who participated twice a week in 80 minutes of moderate to vigorous physical activity (MVPA) in addition to daily PE had significant improvement in body composition (lower body fat and more bone growth) and fitness.[11]

- The GEMS study, which tested a five-day-a-week community-based dance program for low-income African-American eight- to 10-year-old girls over a three-month period, showed trends toward decreases in body mass index (BMI) and improvements in waist circumference.[12]

- The evidence linking general physical activity and excess weight shows that interventions have greater impact on decreasing fat tissue in overweight youth (not normal-weight youth), even at lower doses of MVPA. Because exercise interventions can increase lean tissue (i.e., muscle and bone) at the same time that they decrease fat mass, the effect of these interventions is more clearly seen when the outcome is measured in terms of percent body fat rather than weight.[13, 14, 15, 16]

- Obese children who find a regular form of physical activity (regardless of type) in which they are comfortable participating are likely to lose more weight than other obese children.[17]

- Sedentary behavior, including TV watching, has one of the highest associations with overweight. This may be a result of both the lack of physical movement and the risk of overeating or eating unhealthy foods during that time.[18, 19, 20]

- **Participation in physical activity and sports positively affects cardiovascular health and may have an especially positive effect on girls.**

- Lowering body fatness in children and youth through physical activity has a positive impact on cardiovascular health.[21]

- Children who are more physically active have fewer risk factors for cardiovascular disease;[22] in children and middle-school-aged adolescents, the association between insulin resistance (the linchpin for cardiovascular disease and one of the first signs of diabetes) and low fitness is as strong as, if not stronger than, the link between insulin resistance and body fatness.[23, 24, 25]

- The benefits of physical activity for cardiovascular health may be more pronounced for girls. An experimental study conducted in Spain on physical activity with nine- and 10-year-olds in the after-school setting showed a significant decrease in blood pressure for girl participants.[26] In addition, a six-year longitudinal study in Finland showed that higher levels of physical activity corresponded with improved serum triglyceride concentrations for the female teens only.[27]

- CATCH, a four-state experimental study of a comprehensive school-based health program for elementary school children, found no significant impact on the key study outcomes—cholesterol, BMI and blood pressure—although secondary outcomes such as healthier eating and engaging in more physical activity improved.[28, 29]

- A study of high school students who participated in school-sponsored sports found marked improvement in cardiovascular fitness compared to non-participating students, and significantly better cardiovascular fitness than in those who participated solely in PE.[30, 31, 32]

- **Engaging in physical activity over a sustained period of time can improve bone health.**

- African-American girls showed significant improvement in bone mineral density after participation in an after-school program with more than an hour per day of intense physical activity that involved many sports skills.[33]

- A school-based jumping program delivered three times per week for 10 minutes improved girls' bone density.[34]

- The benefits for bone health are strongest when females begin to participate in sports before or around menarche. However, overtraining with weight-bearing exercises can have detrimental effects on bone health, often referred to as female athlete triad syndrome.[35]

- Various studies also demonstrate the positive impact of physical activity on boys' bone health.[36, 37, 38]

2 Getting involved in sports in childhood is a key to staying involved as a teenager and pursuing physical activity as an adult. Significant gaps in participation during the year can halt or reverse health gains.

- **Considerable evidence suggests that physically active children grow up to be physically active adults.**[39, 40, 41, 42, 43]

- Adults who are more physically active at any given weight have decreased risk factors for heart disease.

- Aerobic capacity is as strong a predictor of death as smoking, diabetes or hypertension.

- Women who participated in team sports in their youth are more likely to be physically active, and as a result to have decreased risk factors for heart disease, including healthier weight and BMI.[44, 45]

- **Initiating involvement in physical activity before the teen years is likely to generate greater persistence with physical activity over the years.**[46, 47, 48]

- **Participation in competitive sports or in a high level of physical activity in the teen years is highly predictive of participation in physical activity as an adult.**[49, 50]

- **Girls who persisted in physical activity (or whose physical activity declined less) were more likely to normalize their weight.**[51, 52]

- **If participation is not sustained throughout the year, youth can lose the health benefits that they gain through playing sports.**

- Children gain weight two or three times more quickly in the summer than during the school year.[53]

- A three-year after-school physical activity intervention conducted with third graders showed that participants significantly reduced their percent body fat during the school year while they were enrolled in the program, but did not maintain their improvements during the summer.[54]

3 Participation in organized activities, including sports, is associated with greater emotional adjustment. Children and teens who engage regularly in organized sports tend to feel more skilled, capable and confident than their peers who do not participate. Girls who routinely play sports or do physical activity also report greater acceptance of their body.

- **Boys and girls who participate in physical activity and sports generally report higher self-esteem.**

- Elementary school children who spent more time in team sports, but not individual sports, reported higher sport self-concept, which correlated with higher self-esteem than their peers.[55]

After-school sports have positive effects on young people's physical and mental health and these benefits are generally present across race, gender, and income.

Sports contribute positively to:

Physical Health	Mental Health
Body composition	Youth adjustment and general well-being
Cardiovascular health	Sense of mastery
Respiratory health	Self-esteem
Bone health	Body image
Reduced weight gain	

- A cross-sectional review of the Add Health data, focused on Latino teenagers who participated in school-based sports, showed a positive association with self-esteem among the Mexican-American girls and boys, the Puerto Rican girls and the Cuban boys.[56]
- A similar review of African-American and white adolescents surveyed through Add Health reports heightened self-esteem across both race and gender.[57]
- In a community-based sample of African-American and European-American youth, controlling for prior levels of self-esteem, participation in organized sports in both middle and high school was associated with higher self-esteem.[58, 59]
- The risk of low self-esteem is reduced for students who engage in MVPA five days a week.[60]

● **Other important indicators of mental health, such as self-efficacy and self-concept, also emerge as strongly related to participation in sports and physical activity.**

- Two rigorous studies with a high percentage of African-American children found that structured and supervised participation in physical activity after school increases reports of self-efficacy for both boys and girls of middle school age.[61, 62]
- An experimental study with over 2,700 girl participants showed that structured physical activity has a significantly positive impact on self-efficacy.[63] Studies that used coed samples found stronger outcomes for girls than for boys.[64, 65]
- As measured on an "athletic self-concept scale," young people involved in sports, in addition to having an enhanced sense of self-efficacy and internal locus of control over life events, demonstrate strengthened self-concept.[66, 67]
- A cross-sectional look through the Youth Risk Behavior Survey at nearly 4,000 African-American and white boys and girls who were involved in physical activity, including team sports, showed that vigorous physical activity is connected to an increased sense of self-efficacy across race and gender; playing on sports teams enhances self esteem for all except white girls, while moderate physical activity appears to strengthen self-efficacy only for white girls.[68]
- While the direction of the effects of sports participation on various measures of mental health is consistently positive, the evidence of long-term effects is mixed and varies depending on indicators and samples. The findings are less strong when measures of prior adjustment are included in analyses.[69]

● **Sports participation for girls is also correlated with improved body image.**

- Girls who participate in sports have more acceptance of their bodies than female non-athletes, though they also are prone to try to lose weight.[70, 71]
- Girls who participate in three or more sports in a year report higher "body esteem" at every grade level measured; boys who are more highly involved in sports also report higher "body esteem," though not in grades three through five.[72]
- Experimental studies conducted with middle-school students, the majority of whom were African-American, found significant positive correlations between after-school physical activity and physical self-concept.[73, 74]
- An Australian study of high school girls from middle-class families found that sports participation and success served as a buffer against poor body image and disordered eating and were positively correlated with self-esteem.[75]
- An analysis of Add Health data found that, independent of weight status, participation in some types of sports that are heavily associated with women—cheerleading/dance team, swimming, tennis, and volleyball—have a greater percentage of female adolescent participants, especially those who are white, who believe they are overweight and engage in various weight-loss strategies; in contrast, adolescent girls who participate in sports that are less gender-identified report more positive images of their bodies.[76, 77]

● **There may be several pathways through which participation in sports is associated with child and youth adjustment and well-being.**

- Involvement in sports enables children to be around other "prosocial peers," which translates into a lower number of depressive symptoms for the participants.[78]
- Sports also provide opportunities for children to make valuable connections with adults in their communities; this is especially important for children who have conflicted or disrupted relationships with their parents.[79]
- Teens in a diverse Midwestern high school who participated in sports activities reported that they learned to better regulate their emotions than teens involved in most other youth activities.[80, 81]
- Feeling better about one's body is connected to improved self-esteem.[82, 83]
- Untrained coaches may contribute to undue or inappropriate pressures on children, generating anxiety and other consequences for children's emotional well-being.[84, 85]

4 Regular engagement in physical activity and sports is generally a positive emotional experience and is protective against certain clinical mental health disorders, including depression and suicidality.

● **Involvement in physical activity or exercise in general is a buffer against depression; participation in sports activities may have some unique protective effects against depression and suicide.**

- In a sample of African-American and European-American youth, after adjusting for prior depression levels, participation in 11th grade high school sports was associated with lower reports of depressive symptoms in cross-sectional analyses but not in longitudinal analyses.[86]
- A group of high-risk urban eighth graders involved in "active, structured" activities has the highest levels of motivated engagement and confidence and the lowest levels of alienation compared with similar youth who are involved in either unstructured activities or no activities at all; these youth report that participation in active structured activities is a positive emotional experience.[87, 88]
- Adolescents who participated for more than 10 hours per week in organized sports were 40 percent less likely to report depressive symptoms than those who were not in organized sports.[89]
- Another large-scale study was unable to show that the accumulated duration of MVPA was associated with depression for either boys or girls. It found, however, that boys who did not participate in sports were at greater risk of depressive symptoms than boys who were involved in sports activities.[90]

- In a study of the Northern Finland Birth Cohort, researchers found that lack of physical activity, when compared to engagement in MVPA, is associated with symptoms of withdrawal and depression, social problems and problems with attention.[91]

- In a comparison of positive and negative developmental experiences high school students have in various extracurricular activities, sports emerged not only as a context providing opportunities for the development of initiative, but also as the one with experiences of high stress.[92]

- Sports participation and intense physical activity among secondary school–age youth are consistently linked to reduced risk of suicide and its precursors, such as thinking about or attempting suicide.[93, 94, 95, 96, 97, 98]

● Sports participation appears to have protective effects against mental health risks over time.

- A middle-class sample of children who spent more time at sports at age 10 reported fewer depressive symptoms at age 12.[99, 100]

- In a study of principally middle- and low-income Latino and African-American youth, participation in sports was associated with fewer anxious and depressive symptoms over time.[101]

- When a high-risk group of adolescents get involved in organized activities, including sports, in eighth grade, by 12th grade they have fewer diagnosable disorders (even when controlled for socio-economic status, mother's history of depression and prior diagnoses of disorders); when the activities are decreased by one, the odds of tobacco use, substance use or having a behavior disorder increase; more activity seems to be better for these youth.[102, 103]

5 Participation in organized sports provides protective effects, differentially by gender, against a range of risk behaviors especially prevalent in adolescence. Youth who play sports are more likely to practice safe sex and girls are more likely to postpone sexual activity; girls and boys who participate are less likely to smoke or use illegal substances.

● Girls and boys receive different messages about sex from engaging in organized sports.

- When girls participate in structured sports they receive messages about postponing sexual activity and protecting themselves against pregnancy.[104]

- When boys participate in structured sports they receive the message that they should "get some, get some early, but get it safely."[105]

- Girls who participate in sports are more likely to start sex later, have fewer partners and use protective methods, and are less likely to be involved in sex in risky ways.[106, 107, 108, 109]

- Boys who participate in sports are more likely to have safer sex by using contraception, but initiate sex earlier, engage in more sexual activity overall and may have more sexual partners.[110]

● Sports participation is generally associated with lower use of tobacco and illegal substances; its effect on alcohol use varies depending on the group.

- In a cross-sectional study of four Midwestern high schools with primarily white students, tobacco, marijuana and alcohol use generally declined among students who participated in sports compared to those who did not.[111]

- Adolescents who participate in greater levels of physical activity are less likely to smoke, or they smoke fewer cigarettes.[112, 113, 114, 115, 116]

- Abuse of alcohol by adolescents who participate in competitive sports is a social phenomenon, a function of the peer group with whom the students are associated. Some studies also show that teens participating in sports show lower use of alcohol than those who are not involved in sports activities.[117, 118]

- Some studies of working- and middle-class youth find that sports participation is linked to higher alcohol use.[119, 120] In contrast, another study of a predominately African-American sample found that athletic participation was associated with lower drug and alcohol use for boys.[121]

Youth of all incomes who play sports are more likely to avoid unhealthy habits, such as:

- Smoking
- Substance abuse
- Engaging in sex in risky ways
- Sedentary behavior

6 Far too few youth get the daily 60 minutes of moderate to vigorous physical activity recommended by the Centers for Disease Control and Prevention (CDC). School-based physical education alone provides insufficient time, highlighting the importance of structured sports and other organized exercise programs after school to help youth obtain the needed intensive dose of health-promoting activity.

● Only 26 percent of high school girls, and 44 percent of high school boys, fulfill CDC physical activity recommendations.[122]

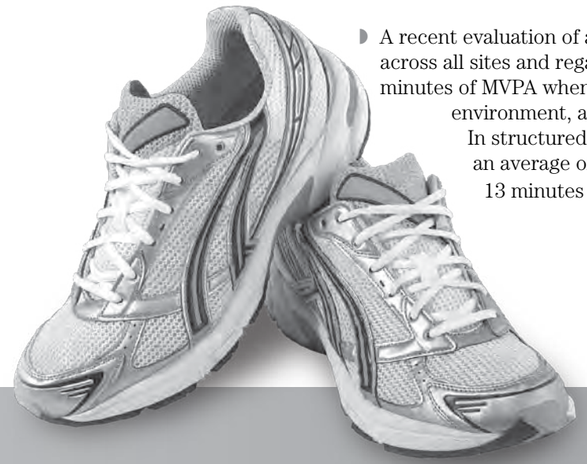
● While an expected part of most schools' curricula, PE offerings are brief, are not intensive and may not treat boys and girls equitably.

- The 2006 School Health Policies and Programs Study reported that more than two-thirds of elementary schools, more than three-fourths of middle schools and 95 percent of high schools required PE, a 10 percent increase from the study in 2000. However, daily PE is rare, and the amount of MVPA children receive in each school week in the PE classes that are available averages about 6 percent of the total that is recommended weekly.[123]

- There is a small but significant disparity between the amounts of PE that girls receive compared to boys. Eighty-four percent of urban and 68 percent of rural 11th and 12th grade girls report receiving no PE classes at all. Boys attend slightly more than girls.[124]

● After-school programs are more likely to have sufficient time, structure and intensity to help meet youth's needs for physical activity.

- Physical activity can take place in many settings, but after-school provides the major block of discretionary time during which children can take part in sustained and vigorous physical activity. [125, 126]



- A recent evaluation of after-school programs in California revealed that across all sites and regardless of class size, children received more minutes of MVPA when the activity was delivered in a structured environment, as opposed to an unstructured environment. In structured environments children experienced MVPA for an average of 24.4 minutes, compared to approximately 13 minutes in unstructured environments.[127]

7 Various individual and community barriers keep certain groups of children—especially girls (particularly those from urban or low-income neighborhoods), overweight youth, and children from under-resourced families and communities—from participating in after-school activities, especially sports.

- Girls, particularly girls of color and those from immigrant families, face special barriers to sports participation.

  - African-American and Latino middle school girls in Texas and California reported negative experiences in PE, including feelings that teachers favored the boys and that the boys excluded the girls from physical activity. These negative experiences contributed to their discouragement about participating in sports.[128]

  - Urban high school girls report challenges such as lack of time; influence of peers, parents and teachers; safety concerns; inaccessibility and cost of using facilities; and body-centered issues.

  - In California, one-quarter of the state's teenagers have no access to a safe park, playground, or open space where they can play sports.[130] Girls in low-income urban neighborhoods have less access to parks and facilities than those living in more affluent communities.[131]

  - Access to a park is only modestly related to the actual availability of a facility with a structured sports program.[132, 133, 134]

  - Girls in immigrant families report lower rates of athletic participation than boys within the same families.[135]

  - Participation in sports may be motivated by a desire to compete or to master skills.[136] In the United States girls are more likely to have a mastery orientation, but the society promotes a performance orientation. This dissonance contributes to girls' dropping out of organized sports programs in adolescence.[137]

- Overweight children and youth and those who perceive themselves to be overweight face special challenges.

  - Children entering puberty, when body mass changes are accelerated, feel awkward about their bodies, which makes them less likely to get involved in activities, especially physical activities.[138]

  - Overweight children generally said that they had not been on a sports team because of lack of opportunity, previous negative experiences and the fact that they did not like sports.[139, 140]

  - Children and youth who are overweight are less likely to get involved in team sports[141] and may already have issues related to speed and coordination.

- Parental activity, challenges and transportation significantly affect children's participation in organized programs in the after-school hours.

  - Parents' beliefs about the value of sports participation, perceptions of children's abilities, level of encouragement, equipment purchases and time involvement predict children's motivation and physical activity participation.[142, 143, 144]

  - Parents' levels of physical activity—both their own exercise and what they do with their children—predicts children's activity throughout adolescence.[145]

  - The Georgia FitKids study, which provided a free, supervised after-school program (including 40 minutes of homework help, a healthy snack and 80 minutes of physical activity) found that only half of the parents signed their children up for the program; of the children who were signed up, only half of them showed up for the program.[146, 147]

  - In some communities, lack of adequate transportation seriously limits children's participation in after-school programs; strapped school districts often lack sufficient resources to provide bus transportation when public transportation is not available.[148, 149]

8 Organized sports opportunities can overcome some barriers to getting involved in regular physical activity.

- For girls, a group setting with a peer component to the program provides a greater inducement to participation than one that has less peer interaction.[150]

- Obese children are more likely to get support and opportunities for physical activity in a structured and supervised environment.[151]

- Obese children who perceived that they did not like or were not competent at sports, but who were randomized to the sports track in a controlled trial, ended up enjoying the sports program, staying in it and joining sports programs after the end of the trial.[152]

- Overweight children reported that what they liked most about being on a sports team was "having fun, making friends, being part of a team, the coaches and exercising."[153]

9 Millions of children engage in no structured activities, including sports, after school; millions more get insufficient time in organized sports during the structured programs in which they do participate. Both situations often contribute to these youths' unhealthy eating and other risk behaviors.

- Far too few children participate in organized and structured activities.

  - Contrary to the perception that children are overscheduled and overcommitted, most children, especially children in low-income communities and children of color, lack opportunities to participate in extracurricular activities.[154]

  - Communities with high concentrations of poverty have higher levels of stress; children who live in high-stress neighborhoods have higher obesity rates.[155, 156, 157, 158]

  - Low-income communities often lack the social infrastructure to support organized after-school sports programs without assistance.[159]

  - Cultural norms about sports and physical activity vary considerably: in some groups, for example, there has to be a purpose, or a destination, in order for physical activity to be considered worthwhile;[160] in other groups, unstructured activity is valued more than organized activity.[161]

  - A 2003 study reported that more than 60 percent of middle school–age children (nine- to 13-year-olds) did not participate in any structured physical activity after school; more than a quarter were not engaged in any leisure time physical activity.[162, 163]

  - An estimated 40 percent of children of all ages are not involved in any after-school activities.[164]

  - Children's participation in organized after-school activities, including school- and community-based sports, rises with family income.[165]

  - A sample of urban African-American middle schoolers in Chicago spent only 2.6 percent of their time in structured after-school activities.[166]

  - Urban sixth through eighth graders who do not participate in after-school activities take in 20 to 25 percent of their daily calories after school when they are "hanging around the neighborhood."[167]

- **Girls experience the least structured physical activity.**

  - Adolescent girls (32 percent) are significantly more likely than boys (18 percent) to report no recent physical activity.[168]

  - A study that correlated sports participation rates to neighborhood income levels found that the percentage of non-athlete girls in grades three through eight was two times greater in lower-income levels. The gender gap remained widest in lower-income communities: gender differences were not significantly different in communities with higher median incomes.[169]

  - Parents of girls reported more concerns about neighborhood safety as a barrier to their children's participation in organized physical activity than did parents of boys.[170]

- **Many after-school programs provide insufficient concentrated time on MVPA for students to receive significant benefit.**

  - While some after-school programs increased the physical activity levels of children, others did not, according to a recent review of the scientific evidence.[171]

  - A study of third through sixth grade boys and girls in after-school programs showed that, on average, children experienced less than 20 minutes of MVPA and more than 40 minutes each of sedentary and light physical activity during a 90-minute period.[172]

RECOMMENDATIONS

We know enough about the critical health benefits for children and adolescents of engaging in regular vigorous physical activity through organized sports for the development of a roadmap to ensure that all children get these benefits. The recommendations that follow call for changes in policy and practice and identify important areas for future research.

Policy

The policies promoted are designed to eliminate disparities in access to high-quality organized sports and strengthen the quality of organized sports programs.

1 Promote the importance of benefits to health, as well as of positive educational and mental health outcomes, to advance the need for more organized after-school programs, especially sports, for children and youth. Ensure that federal programs that support after-school activities are adequately funded and incorporate high-quality organized sports opportunities

a. Demonstrate that the health-promotion benefits of after-school sports participation complement, rather than detract from, the educational goals of participation

b. Establish a goal specific to youth participation in health-promoting sports in the National Physical Activity Plan and, with collaborating partners, develop recommended strategies to implement this goal

c. Create, through a consensus process, an index for health-promoting sports for children and youth that includes definitional criteria; a continuum of quality; sensitivity to diversity, culture, participation, access and motivation; strategies for program accreditation or certification; and a future research agenda

2 Strengthen the quality of programs to foster the attributes that lead to positive developmental outcomes for children and youth

a. Ensure that federal and state standards for after-school programs include guidelines for incorporating organized sports activities that meet health, education and developmental goals for children and adolescents

  i. Strongly encourage after-school programs to include a physical activity component of sufficient intensity and duration that children and youth will be able to meet the daily 60 minutes of MVPA recommended by the CDC

  ii. Create incentives for year-round and summer programs

b. Incorporate into federally required school wellness policies a requirement that plans outline how schools, in consultation with community partners, will ensure that students meet the CDC guidelines for physical activity through a combination of school-based, after-school and summer physical activities and organized sports

c. Create both financial and technical assistance incentives and support for programs to achieve these standards

d. Create both financial and technical assistance incentives to recruit and train volunteer coaches in low-income communities

3 Expand access to safe and high-quality organized supervised sports activities for children in low-income communities, children of color and girls

a. Foster "joint use agreements" to open school and public playing fields and facilities to organizations that can implement supervised sports opportunities for underserved children and youth

b. Expand the availability of safe, accessible open spaces and facilities in low-income communities for organized sports programs by creating new or revamping existing spaces

c. Prioritize underserved low-income communities for placement of organized sports opportunities for children and youth in the non-school hours in efforts to eliminate health disparities on the federal, state, and local levels

d. Support adequate and sustainable funding streams for organized sports programs in the after-school and summer hours, with priority given to low-income and other underserved communities

4 Strengthen evaluation and accountability for after-school organized sports programs

a. Support the development of tools to assess the amount of MVPA children and youth receive within and across school and after-school programs

b. Incorporate into federal and state programs encouragement to conduct assessments of the effectiveness of school and after-school programs in meeting federal guidelines for physical activity for children and youth

On the Ground: Policies for Health-Promoting Sports

States Can Set Standards for After-School Physical Activity

The California Department of Education issued a set of voluntary physical activity guidelines for state-funded after-school programs.The intent of the California Afterschool Physical Activity (CASPA) Guidelines is to create high-quality physical activity programs that expand learning opportunities of the regular school day. The guidelines encourage programs to incorporate youth development principles and to ensure that all students receive appropriate amounts of physical activity. *The CASPA guidelines are available at http://www.cde.ca.gov/ls/ba/as/documents/paguidelines.pdf.*

Eat Smart, Move More North Carolina created after-school guidelines in collaboration with a variety of state agencies, including the Department of Public Instruction and the Department of Health and Human Services, as well as a number of community-based organizations. The standards offer flexible recommendations to help after-school programs increase the amount of physical activity they offer and help more children and youth achieve the CDC's recommendation of 60 minutes of physical activity every day. The guidelines are available for download on Eat Smart, Move More's website: *http://www.eatsmartmovemorenc.com/AfterSchoolStandards/AfterSchoolStandards.html.*

Joint-Use Policies are Key to Eliminating Barriers: The Unity Council

The Fruitvale neighborhood has one of the highest concentrations of children living in Oakland, California and one of the smallest numbers of parks, after-school programs and teen centers. The Unity Council, a community development organization, helped to develop the Cesar Chavez Education Center—a complex of two public elementary schools and a new state-of-the-art turf playing field complete with lighting for night use. The Unity Council convened a steering committee of staff from the Oakland Parks and Recreation Department, the Oakland Unified School District and the local city councilmember's office to create an unprecedented field-use policy for the Center, which gives priority to organizations that predominantly serve Fruitvale youth. As a result, the field and gym are now full to capacity during evenings and weekends. When other Oakland school facilities are locked, hundreds of Fruitvale youth are able to participate in soccer, basketball and other sports programs in a safe, well-lit and well-maintained facility in their own community.

Local Communities Can Invest in After-School Sports: Oakland Fund for Children and Youth

Each year the city of Oakland, California dedicates 3 percent of its General Fund to the Oakland Fund for Children and Youth (OFCY), which supports a wide range of youth programs. The largest funding stream is reserved for state- or federally funded school-based after-school programs. OFCY funds are intended to enhance youth development enrichment activities by supplementing other state and federal after-school funds.

During the 2010–2013 OFCY funding cycle, elementary schools will have the option of applying for $7,000 physical activity augmentation grants that can be used for sports. These grants are designed to increase access to high-quality physical activity programs that improve participants' physical health, self-confidence and cooperative social skills, while encouraging increased enjoyment and connection to physical activity.

Practice

Practice recommendations advance strategies to guarantee well-trained coaches, since they are pivotal to children's experiences and outcomes. Training ensures that all children feel welcome and engaged, that sufficient time is devoted to moderate to vigorous physical activity to achieve the desired health benefits, and that parents are key players in their children's involvement in after-school sports activities.

1 Expand the use of volunteer coaches in organized sports programs in low-income communities

a. Recruit college students, including college athletes, to use their energy, talents and commitment as volunteer coaches in under-served communities, and provide credit for work-study and/or service-learning

b. Incorporate into college a service-learning curriculum component that recognizes the role of volunteer coaches and their contribution to the community

c. Increase collaborations between universities and on-the-ground organized sports programs as venues for graduate student training for human services majors

d. Recruit, train and provide ongoing support to a range of other volunteer coaches in organized sports programs in low-income communities, including retirees, working adults, parents, high school students and other community members

2 Train coaches to ensure the best health outcomes for their youth participants

a. Employ strategies to increase vigorous physical activity, including methods to ensure children and youth are not "waiting in line" or "waiting around to play"

b. Foster strategies to improve dietary habits and break the link between after-school hours and unhealthy snacking

3 Train coaches to involve children and youth who may be disinclined to join or persist in sports programs

a. Enable children who are overweight or obese to have fun, experience regular participation and learn skills and competencies that will increase their confidence and likelihood of persistent engagement

b. Encourage, support and sustain participation in sports of children and youth with attention deficits

c. Mediate on behalf of other marginalized tweens and teens, such as LGBT youth and youth with disabilities

d. Make special efforts to engage children in organized sports before they enter middle school and to retain them through adolescence

4 Set developmental goals for organized sports programs

a. Gear programs toward specific program goals that include health and learning outcomes for participants

b. Link coach and program leadership training to program goals

c. Link measurement tools for youth participants, such as Fitnessgrams, to training and evaluation of teachers and coaches, and use them as training tools for volunteer coaches

d. Train after-school program administrators on the importance of evaluation and teach them how to apply non-intrusive measurement tools such as the SOPLAY (System for Observing Play and Leisure Activity in Youth), the SOFIT (System for Observing Fitness and Instruction Time) and Fitnessgrams to track how much MVPA children receive and its impact on their health and fitness

5 Promote participation by incorporating group competition models as well as individual competition models

a. Reward group success as well as individual success in the context of team competition

b. Help children focus on trying to reach their "personal best" performances

c. Keep everyone active during a sports session

d. Explore ways for girls and boys to engage in separate sports opportunities to help girls feel more comfortable, confident and persistent in participating in sports

e. Expand school-based sports opportunities through expanded varsity programs, freshman teams and alternative programs that are open to children of all abilities

6 Engage parents in low-income and immigrant communities to support participation of their children and teens in organized sports programs

a. Take specific steps to introduce to parents in low-income communities the importance of organized sports programs and their beneficial effects

b. Encourage parents to volunteer as coaches, when possible, and to attend their children's games and events

c. Hold games and team events during times when working parents are most available to attend

d. Integrate physical activity, such as short bouts of group exercise, for spectators at team events so that families can "get moving together"

e. Assess with parents, especially immigrant parents and parents of girls, whether incorporating homework time into organized after-school sports programs is an incentive to allow their children to participate

f. Involve parents and children in identifying, and as members of coalitions advocating for the use of, indoor and outdoor spaces and facilities where organized sports programs can potentially be placed and children can participate safely

g. Provide regular and accessible information to parents about how to find safe, accessible, high-quality and developmentally appropriate organized sports programs for their children in the nonschool hours

On the Ground: Practices for Health-Promoting Sports

Programming That Keeps Kids Moving Maximizes Health Benefits: America SCORES

America SCORES is a soccer and literacy program serving elementary and middle school students in 14 cities nationwide. Students engage in three days of targeted physical activity each week, for a weekly average of five hours. All sessions include stretching, running, soccer skills practice and games that keep kids engaged in moderate to vigorous physical activity.

Soccer can be played with nothing more than a ball, and it requires less motor coordination than some other sports, so it is ideal for getting kids in under-resourced communities moving. SCORES provides a ball for each participant and structures its curriculum to ensure that kids are active all the time rather than standing around waiting for a turn. Games and scrimmages are designed for three or fewer players on each side and coaches are trained to conduct drills that keep kids in constant motion.

Trained Coaches are Integral to Any Quality Sports Program: Girls in the Game

Every year Girls in the Game exposes more than 2,500 girls in Chicago to a wide mix of sports and fitness activities along with workshops on nutrition, health and leadership. Researchers from Loyola University found that after one year in Girls in the Game's 30-week after-school program, girls have healthier eating habits, exercise more, have healthier body images and have better social skills than their peers.

One of the keys to the success of the after-school program is its in-depth coach training, which is built on a detailed and well-researched written curriculum. The curriculum is aligned to the state standards in PE, Health and Social Emotional Learning. After an initial orientation, coaches receive training before each three-week program module on both the curriculum and a specific professional development topic. Coaches are trained to be comfortable with each sport as well as in important skills like behavior management, engaging parents and connecting with schools. Coaches, girls and supervisors complete evaluations after each module. Coaches are observed during practice by their supervisors and receive an annual written review.

Research

Important questions remain about the impacts of organized sports on important physical and mental health outcomes, and about the strategies to ensure the most positive impacts; recommendations call for an integrated research agenda, new measurement tools and new ways to enable youth and community members to become partners in the research.

1 Build an integrated research agenda focused on health-promoting sports for children and youth

a. Increase experimental, longitudinal and implementation research focused on the public health impact of organized sports for children as well as the most effective strategies for achieving these positive health outcomes for children of different abilities, ages, genders and racial, ethnic and income groups.

b. Increase the number of randomized controlled trials to determine the effects of MVPA through sports on normal-weight kids

c. Pursue the following research questions:

- **i.** How does the physical activity (including intensity and duration) interact with youths' eating habits during the after-school hours? What is the best combination of physical activity and after-school snacks to achieve healthy outcomes?
- **ii.** Do children need to eat more, and if so how much and of what type of food, as they increase their engagement in MVPA through organized sports?
- **iii.** What are the most promising strategies to get children and youth to participate in vigorous after-school physical activity programs such as sports?
- **iv.** Which sports in which settings have an impact on vigorous physical activity?
- **v.** What strategies should be used to train coaches to increase vigorous physical activity?
- **vi.** What are exemplary models of after-school sports programs that achieve sustained impacts on children's and adolescents' health outcomes? What are the individual, family and community barriers and promoters of model sports programs for different age groups and children from diverse groups (gender, race, ethnicity, income, ability)?
- **vii.** What are the most effective strategies to engage marginalized children or those who perceive they lack the competencies to participate in sports activities or will be subjected to harassment of some kind?
- **viii.** What are the pathways and processes that generate physical and mental health outcomes and how do they differ for children and youth of different ages, racial or ethnic groups, or genders?
- **ix.** Does participation in sports plus other activities produce different health outcomes from participation in sports alone?
- **x.** What is the impact of various policies designed to foster greater physical activity, especially in organized sports programs, among children and adolescents?
- **xi.** What are the economic benefits to society of children's and adolescents' participation in organized after-school sports?

2 Develop new and refine existing measurement tools to assess more effectively the impact of physical activity on children

a. Create a benchmarking process and tool with which programs can assess their impact on the health and health behaviors of children and youth participants

b. Test measurement tools that can most effectively and simply be used by practitioners

3 Engage youth and other community members in the design and implementation of research about youth and organized sports

THINGS TO CONSIDER: WHEN WORKING WITH GIRLS

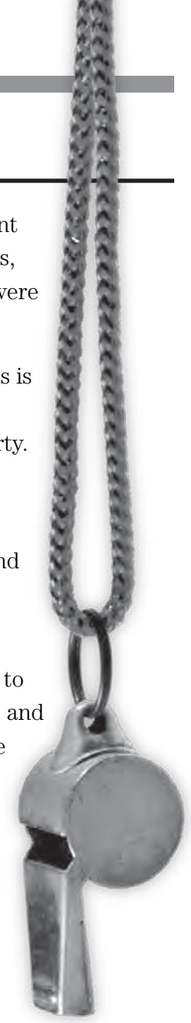
- The physical health benefits that girls experience through sports participation are different from—and sometimes stronger than—those experienced by their male peers. In some studies, outcomes related to blood pressure, triglyceride levels and certain mental health indicators were stronger for girls who played sports than for boys.

- Programs should carefully integrate weight-bearing exercises that build bone density. This is particularly important for girls, as they are more likely to experience osteoporosis and other bone-related disorders later in life. For best results, these activities should start before puberty.

- In general, girls who play sports may have more positive body images and higher levels of self-esteem; however, this is not true for all sports. Girls who are involved in cheerleading, swimming and other highly gender-identified activities are more likely to try to lose weight and may have less positive body images, compared to girls who play other sports. Parents and coaches should monitor girls for excessive exercising and unhealthy eating habits.

- Programs that develop strong relationships with families can help girls overcome barriers to sports participation. Girls' participation is closely linked to cultural and familial expectations, and girls from immigrant families are less likely to play sports than their brothers. Parents may be more protective of their daughters and neighborhood safety is a crucial factor to keep in mind when considering access to parks and other recreation facilities.

- Girls' sports programs should be designed to accommodate girls' motivations for getting involved and staying involved in sports. Compared to boys, girls may be more motivated by mastering new skills and improving their individual performances, and less motivated by winning. Also, the social component of team sports is particularly important for girls who value the friendships and bonding that they experience with their teammates.



THINGS TO CONSIDER: WHEN WORKING WITH YOUTH OF DIFFERENT AGES

Elementary School

- Elementary school is an ideal time to get youth involved in organized sports.
- Coaches should help players develop fundamental sports skills and knowledge so that they are more likely to persist in sports when they enter middle school, where the level of play is more competitive.
- Sports at a young age offers protection from health concerns later in life. This is particularly true for mental health and bone health.
- Programs need to solicit buy-in from parents. At this age, parents call the shots on what programs their children participate in.
- Transportation is a big issue. At young ages, children have no way to get to programs on their own. If a program is not located on a school site, program leaders should develop a transportation plan.
- Sports programs should be fun so that participants will want to stay involved as they get older.

Middle School

- This is the time when some youth, particularly girls, start to drop out of sports.
- Young people's bodies and athletic talents will start to differ. Certain youth will become very strong and fast and they may leave their less adept peers behind. Sports programs should have strategies to retain youth with varying levels of athletic ability.
- Boys and girls should have separate teams or groups at this age. This will help girls persist in sports.
- Youth start to have more responsibilities, such as sibling care and schoolwork. Sports programs should plan their schedules to accommodate their target audiences.
- At this age, youth start to have a certain amount of autonomy over their activities. They might leave or drop out if they are not having fun or are not connected to peers and adults in the program.
- Approach parents as allies and help them understand the program's benefits.

High School

- At this age, a young person's responsibilities escalate. Participants need to balance sports with responsibilities at school, at work and in their family lives.
- High school students are largely responsible for deciding what extracurricular activities (if any) they are involved with. Youth need to believe that a program is worth their time.
- Schools should offer junior varsity or freshman teams for youth who are not skilled enough for varsity.
- It is rare for non-athletes to start playing in high school. If they do not have experience in a sport, they may find that the level of play is just too high. There should be opportunities for nontraditional sports where participants can start on a level playing field.
- Programs should be wary of "jock" culture. Drug and alcohol use can be associated with sports, depending on the culture of the team.
- Coaches should monitor players (especially girls) for over-exercising and improper eating habits.

THINGS TO CONSIDER: WHEN WORKING WITH YOUTH WHO ARE ALREADY OVERWEIGHT OR OBESE

- The physical activity needs of overweight youth might be different from those of their normal-weight peers. Although the CDC guidelines recommend 60 minutes per day of MVPA, children and youth who are overweight often achieve results with shorter and less vigorous doses of physical activity. However, as they get in better shape, they must increase their dosage in order to continue to see results.

- The impact of physical activity might be more evident in measures of body composition than in measures of weight. As a young person becomes more active, muscle mass and bone density increase. Because of this, weight can be a misleading indicator. Instead, consider measuring body composition to determine if a program is delivering results.

- Coaches should offer healthy snacks and discuss the importance of proper nutrition to help their players make smart choices. Physical activity alone often is not enough to improve body composition. Exercise often leads to increased appetite and young people should be encouraged to increase their intake of healthy foods to build strong muscles and bones. However, if youth select foods that are high in calories and low in nutrients, they are unlikely to improve their body composition.

(continued on page 22)

THINGS TO CONSIDER: WHEN WORKING WITH YOUTH WHO ARE ALREADY OVERWEIGHT OR OBESE *(continued)*

- Overweight children should be encouraged to play sports for their mental health benefits. Overweight and obese children are at higher risk for certain mental health problems, such as depression or ADHD. Physical activity can be a protective factor against some of these problems.

- Special efforts should be made to help overweight youth overcome barriers to participation, including actual or perceived lack of athletic competence. These youth often avoid sports because of previous negative experiences, awkwardness with their bodies or lack of opportunity to gain athletic skills. As time goes on and the youth get older, the skill gap between overweight youth and their normal-weight peers will become larger and it will be harder to get in the game. Schools and community programs need to offer opportunities for youth with varying levels of athletic talent and encourage their participation.

- With proper training, coaches can create organized physical activity environments in which all youth are expected to participate, regardless of ability. As a result, youth who might otherwise sit on the sidelines during free play can get involved, develop skills, and come to enjoy a sport, even if they initially assumed that they would dislike it. These factors can contribute to sustained participation in physical activity.

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APPENDIX

Research Issues

Relatively few studies focus directly on sports and physical health for youth; studies on sports and mental health are more numerous. As a result, we present findings based on studies about physical activity and health, drawing on data about sports and health whenever possible.

In linking organized sports to health and mental health benefits, the literature employs a number of concepts but the distinctions among these concepts are not always carefully drawn:

- Physical activity - An umbrella term that may or may not refer to a structured and supervised setting
- Physical education (PE) - Instructional time for learning of movement, exercise and sports skills or in-school-time structured physical activity, and organized
- Adult-supervised sports activities - Activities that take place during out-of-school time, generally after school or during the summer.

The studies we reviewed consider both school-based activities and community-based programs; some research focuses on participation in out-of-school time and some assesses physical activity participation during the school day.

As a result, the studies vary in terms of the intensity and duration of physical activities in which children and youth engaged, which may significantly affect the outcomes achieved. The research also spans different target population groups. It is noteworthy that a substantial portion of the research conducted in the United States focuses on children in low-income urban or rural areas, as well as African-American, Latino and overweight children. Finally, researchers explore a wide range of outcomes and employ a number of different measures to determine the impacts of sports participation; the outcomes chosen and the measures used can also influence the strength of the findings.

We include research findings from both observational and intervention studies to understand their general direction and how they vary by age, gender, race and income. Some of the findings may be inconsistent or contradictory because of different methodologies, different samples of children and communities and a range of activity or program experiences. In addition, the experts may differ in their theories as to what generates the effects they have uncovered.

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† Attended convening facilitated by Ann Rosewater and co-hosted by Kaiser Permanente on October 5, 2009

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Ann Rosewater, *May 2010*

About the Author

Ann Rosewater provides consultation services to foundations, universities, not-for-profit and governmental organizations in strategic planning and policy development. Ms. Rosewater held several senior positions at the U.S. Department of Health and Human Services (HHS), including: regional director for the eight Southeastern states, counselor to Secretary Donna Shalala, deputy assistant secretary for children and families and deputy assistant secretary for human services policy. She was a member of the National Advisory Council on Violence Against Women and the National Advisory Committee on Services for Families with Infants and Toddlers, which designed the Early Head Start program. Among other activities she coordinated the Department's participation in the Federal Support to Communities initiative to maximize opportunities for children and youth in the nonschool hours.

Prior to serving at HHS, Ms. Rosewater helped create and served as staff director of the Select Committee on Children, Youth and Families in the U.S. House of Representatives and as senior legislative assistant to Congressman George Miller. Ms. Rosewater has written extensively on child and family policy, child welfare, child and adolescent health and development, education, disability rights and long-term care, women's issues and comprehensive strategies to reduce urban poverty. Among her recent publications are: *Pathways from Brain Research to Policy: Highlights from the National Summit on Children*; Healthcare Georgia Foundation's *HealthVoices: Home and Community-Based Services: A Robust, Rational and Ready System for Georgians*; *Equity, Public Health and Philanthropy in the South*; and *Promoting Prevention, Targeting Teens: An Emerging Agenda to Reduce Domestic Violence*. Ms. Rosewater is vice-president of the board of the Juvenile Law Center.

Ms. Rosewater is also the author of *Learning to Play and Playing to Learn: Organized Sports and Educational Outcomes*, published by Team-Up for Youth in February 2009.

About Team-Up for Youth

Team-Up for Youth uses sports to change the lives of underprivileged kids. What children learn on the playing field from great coaches – self discipline, resolve, cooperation, courage – help them succeed in school, work and family life.

Team-Up for Youth works with organizations to expand and improve after-school sports programs in neighborhoods that need them most.

Since our founding in 2002, Team-Up for Youth has trained over 1,800 coaches, sports programs leaders and staff, strengthened more than 150 community based organizations, and made a positive impact in the lives of more than 70,000 kids in California and beyond.

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