



PHYSICAL ACTIVITY AND ITS IMPACT ON HEALTH BEHAVIOR AMONG YOUTH

Prof. Dr. Diane H. Jones-Palm
University of Maryland European Division, Heidelberg, Germany
Prof. Dr. Jürgen Palm
President, Trim and Fitness International Sport for All Association

This technical paper will provide an overview of how sport and physical activity can contribute to general positive health practices (e.g. non-smoking, healthy diet, etc.) as well as to the prevention of problematic behaviors such as early teenage pregnancies and antisocial or violent behavior.

Summary:

Most of the research on the effects of physical activity on health behaviors has been conducted in the United States (US), Canada and Australia, where nationally representative samples of youth involved in organized, school- and community-based sport programs are compared with those who are not active in such programs. The positive effects of these types of organized physical activity, which in this report will be referred to as 'sport', are well documented and reported on here. In general, there is clear evidence that youths participating in competitive sports programs are more likely to eat more healthily, be of lower weight, be less likely to smoke cigarettes, or engage in sexual activity. In addition, sports participation has been shown to be associated with less antisocial behaviors such as drinking alcohol, use of illicit drugs, and engagement in violent activities.

1. The relationship between sport and smoking

Youth who participate in organized sports at school or in their communities are less likely to engage in risky behaviors, such as cigarette smoking and drug use, than non-sports participants (Pate, 2000). A study in the US suggested that high school athletes smoke only slightly less than their inactive classmates, but use snuff or chewing tobacco more often. This study drew on data from a national survey of American adolescents (Gerlach, 1996).

2. Sports, drugs, eating and drinking behaviors

Many studies show that youth involved in organized sports have lower rates of drug use. Male and female teenaged athletes are less likely to use drugs, including marijuana, cocaine, crack cocaine, heroin and hallucinogens. Both male and female sports participants report a slightly higher incidence of binge drinking than non-sports participants, but lower overall alcohol use (Australian Institute of Criminology, 2000).

There is, however, some evidence that sports participation, particularly among males, can increase some harmful health behaviors. In one study, sports participants were as likely as non-participants to report engaging in binge drinking during the previous month, as well as eating high-fat foods, and vomiting or using laxatives to prevent weight gain. However, in general, youth involved in organized sports are more likely to report eating fruits or vegetables the previous day and less likely to be overweight (US Department of Health And Human Services, 2004).

3. Sport and antisocial behavior

Organized sports have been associated with less antisocial behavior, such as carrying a weapon, or contemplating or attempting suicide. (US Department of Health And Human Services, 2004) Lower suicidal ideation has been reported among those engaged in organized sports. Girls' participation in sport enhances body image and self-esteem, increases confidence and scholastic performance, decreases school drop-out rates, and reduces the risk of depression (Girls, Inc, 2000).

Australian Sports Commission investigated whether sport and organized physical activity programs have a positive effect on youth antisocial behavior. A number of crime prevention strategies worldwide involve physical activity and sports as deterrents to crime (Australian Institute of Criminology, 2000).

Despite the empirical studies that show positive effects, some research has shown that in some cases, those that engage in highly competitive contact sports, such as ice hockey, football, and rugby may promote violence among participants. In such cases, the pressures associated with sports can promote excessive anxiety and aggressive behavior. The negative outcomes of sports involvement appear to be due to adults, particularly parents and coaches, and the emphasis on winning, and when the pursuit of victory is accompanied by direct and indirect signals that aggressive behavior is acceptable to achieve it.



In spite of such evidence, the criminology literature includes recommendations for making sports a venue for reducing anti-social behavior. Further, many crime prevention programs have successfully used sport to promote positive behaviors (Abdal-Haqq, 2004).

4. Sports and pregnancy prevention

Large studies have found that girls who play sports have lower pregnancy rates, engage in sexual intercourse less frequently, have fewer partners, and begin sexual activity later than those not involved with sports (Wade, 1998).

5. Physical activity vs. organized sport: are the effects on health behaviors the same?

Considering that the literature on sport and health behavior focuses on participation in structured, organized and often competitive sports for youth, it is reasonable to question if a similar positive effect exists for physical activities that are less organized or competitive, and fall under the '30 minutes of moderate activity' promoted by many world and national public health agencies.

Only one study (reported in Archives of Pediatrics and Adolescent Medicine, 2003) attempted to distinguish risky behaviors among adolescents who are specifically associated with participation in team sports rather than those associated with [physical activity](#) alone. Teenagers who are physically active and participate in team sports were found to be less likely to engage in unhealthy behavior such as substance abuse and risky sexual activities than those not involved in team sports. Fewer boys in team sports were found to have used "other drugs" like cocaine, heroin and methamphetamines, compared to their active nonteam counterparts. Otherwise, active team males were no less likely to have used cigarettes, marijuana, or alcohol or to have initiated intercourse than their active nonteam or nonactive peers (DiscoveryHealth.com, 2003). For female students, however, the combination of team sports and physical activity was particularly important. Female teens who participated in team sports and who were vigorously active were less likely to engage in risky behaviors than teens who were only part of a team or only exercised vigorously. This research might indicate that physical activity in general, and being on a team but not participating are not sufficient enough to gain a positive effect on health behavior—teens need to be active members of the team. The study's authors say team sports, particularly for girls, affords benefits beyond the known physical ones.

In addition, there is evidence that parents who engage in physical activities with their children are more likely to have children with positive health behaviors. It seems clear that active parents play an important socializing role in imparting positive health behaviors in their children.

There are some points to be made. First, more research must be conducted to determine if organized youth sports yield a bigger impact on positive health behaviors than less organized physical activity that might fall under the '30 minutes of moderate physical activity' health recommendations by WHO, US Centers for Disease Control and other public health institutions.

Obviously not all youth participate in organized, competitive sport activity. Indeed, the children at risk for inactivity and negative health behaviors may be those who do not have access to or are not inclined to participate in group sports. Thus, there is a need for the development of health-promoting physical activity outside of the rubric of organized, competitive sport.

6. The theoretical bases for the relationship between sport, physical activity and health.

The social and behavioral mechanisms by which sport affects health are supported by a large literature on determinants of health behavior. Three theoretical perspectives apply here: First, sports may enhance health due to the positive socializing influences of teachers, coaches, leaders and the requirements of team membership. Leaders may be more likely to promote healthy lifestyles in the course of team sport participation. The commitment to team sports, fear of jeopardizing team positions, and pressure to be fit and healthy may also enhance health.

Second, sports may provide an outlet for aggression and/or divert individuals from negative influences. Placing youths in environments conducive to positive behaviors leaves less time for engaging in negative behaviors

Third, sports may enhance personal resilience and esteem, and provide a setting to learn positive health behaviors. For girls in particular, athletic participation in sport may enhance self-confidence, provide a sense of physical empowerment, and give social recognition within the school and community. The self-reliance and social status gained through athletic participation may help girls resist social pressures to exchange sex for approval or popularity.

7. Implications

There is a clear consensus that children and youth should be involved in physical activity on a regular basis, and that teaching/reward systems should encourage active participation and enjoyment by all students, not just the highly



skilled. Indeed, it is the children who are the least successful in traditional sports and athletics who are most likely to be physically inactive and have the most negative health behaviors.

Research to date points to the strength of organized sport programs in settings such as school or clubs as having the biggest demonstrable impact on health, although there is good theoretical bases to believe that non-structured physical activity of sufficient duration and intensity, such as play, bike riding, swimming, should have an impact on health. Further, there is a need to reach youth who are not attracted to or have access to organized sport activities.

8. Recommendations

- There is a need to conduct international comparative surveys on the physical activity of children and youth in both organized settings such as schools, clubs and community centers as well as leisure time (less structured) settings.
- National commissions should be established to construct projects and policies for the improvement of conditions for the physically active children's life and develop national campaigns directed at children and youth. Such commissions should involve parents, politicians, teachers, physicians, architects, city planners, sport organizers, social workers, religious organizations as well as youths themselves.
- The importance of the parental role in facilitating children's physical activity should be given more attention in research and public health promotion.
- Physical activity in children and youth should be given more attention in the paediatric and adolescent medicine curriculum.
- Physical activity and inclusive organized sports should be given more attention in the physical education curriculum.
- Space and facilities for physical activity, games and sports at the village, community, neighbourhood and city level should be a priority.
- Communities should set aside safe places for walking and active excursions for the family.
- Games and play festivals for the family should be developed for communities and cities. Networks of activity-oriented projects for children and youth could be developed that involve kindergartens, schools, clubs, religious organizations, recreation centres, medical facilities etc.
- The efforts of sport, youth organizations, schools and community agencies should be coordinated with a focus on youth.
- Extra-scholar competitive and non-competitive sport programs in sport clubs, in recreational programs and other out-of school settings should be promoted, according to age groups and ability levels.
- Develop national or city programs that define age oriented fitness activities and fitness tests with awards and incentives for achievement.
- Develop integrated media programs aimed at youth that utilize stories, comics, games and sports events aimed at different age groups.

Bibliography

_____: Teens in sports live healthier lifestyles. HeartInfo.org. (SOURCE: Archives of Pediatrics and Adolescent Medicine; 2003;157:905-912) Accessed on 6/01/04, available at <http://www.heartinfo.org/ms/news/8006997/main.html>

Abdal-Haqq, Ismat. Violence in Sports. Child Development Institute, 2004. Accessed on 6/1/04, available at http://www.childdevelopmentinfo.com/health_safety/violence_kids_sports.shtml

American Sports Data, Inc: [Sports Participation: The Metaphor of Youth Development](#) (2003) Accessed on 6/1/04, available online at http://www.americansportsdata.com/pr_01-31-02.asp

Associated Press: Youth Sports Discussion: The positives of participating in youth sports (a discussion of work by Russ Pate) 2000.. Accessed on 6/1/04, available at http://ed-web3.educ.msu.edu/ysi/_disc2/0000001d.htm

Australian Institute of Criminology (2000) "Sport beats crime" Accessed on 6/1/2004, available at <http://www.activeaustralia.org/facts/>

Benard, Bonnie -- Resilience Research: A Foundation for Youth Development. Summer 1996. New Designs for Youth Development. pp 4-10.



Blum RW, Beuhring T, Shew MI, Bearing IH, Sieving RE, Resnick MD. 2000. The effects of race/ethnicity, income and family structure on adolescent risk behavior. *American Journal of Public Health*, 90(12). Available at www.peds.umn.edu/peds-adol/PDFs/10764%20Ethnicity.pdf

Brown DR, Blanton CJ. Physical activity, sports participation, and suicidal behavior among college students. *Medicine and Science in Sports and Exercise* 2002;34(7):1087–1096.

Burgeson CR, Wechsler H, Brener ND, Young JC, Spain CG. Physical education and activity: Results from the School Health Policies and Programs Study 2000. *Journal of School Health* 2001;71(7):279–293.

California Law Center (2002) : Girls Participation in Sports: an important tool in pregnancy prevention. Accessed on 6/1/04 and available at http://www.cwlc.org/newsarticles/athletics_and_teen_preg.pdf

Catalano RF, Hawkins JD. 1996. The social development model: A theory of antisocial behavior. In *Delinquency and Crime: Current Theories*, Ed: Hawkins, J.D. New York, NY: Cambridge University Press, pp 149-197.

Dietz WH. Health consequences of obesity in youth: Childhood predictors of adult disease. *Pediatrics* 101(3)Supp:518-525. Mar 1998.

Discovery Health.org : Team sports skirt risky behavior. . 2003. Accessed on 6/01/04, available at <http://health.discovery.com/news/healthscout/article.jsp?aid=515005&tid=24>

Escobedo LG, Marcus SE, Holtzman D, Giovino GA. Sports participation, age at smoking initiation and the risk of smoking among US high school students. *Journal of the American Medical Association* 269:1391-5. 1993

Galuska DA, Fulton JE, Powell KE, Burgeson CR, Pratt M, Elster A, Griesemer BA. Pediatrician counseling about preventive health topics: Results from the Physicians' Practices Survey 1998–1999. *Pediatrics* 2002;109:e83.

Garbarino J, Abramowitz R. 1992. Sociocultural risk and opportunity. In J. Garbarino (Ed.), *Children and families in the social environment* (pp. 38-63). New York: Aldine de Gruyter.

Gerlach, Karen K. "School sports don't keep kids away from tobacco. *American Journal of Health Behavior*. (1996), quoted in Levin, Aaron. *Health Behavior News Service* (2004) accessed on 6/1/04, available at <http://www.cfah.org/hbns/news/sports02-04-04.cfm>

Girls Incorporated: Facts: Girls in Sports. Accessed on 6/1/04, available at <http://www.girlsinc.org/ic/content/GirlsandSports.pdf>

Kann L, et al. Youth risk behavior surveillance—United States, 1999. In: *CDC Surveillance Summaries*, June 9, 2000. *MMWR* 49(No. SS-5):1-96. 2000.

Levin S, Lowry R, Brown DR, Dietz WH. Physical activity and body mass index among US adolescents. *Archives of Pediatric Adolescent Medicine* 2003;157:816–820.

Lowry R, Galuska DA, Fulton JE, Wechsler H, Kann L, Collins JL. Physical activity, food choice, and weight management goals and practices among US college students. *American Journal of Preventive Medicine* 2000;18(1):18–27.

McGraw SA, Sellers D, Stone E, Resnicow KA, Kuester S, Fridinger F, Wechsler H. Measuring implementation of school programs and policies to promote healthy eating and physical activity among youth. *Preventive Medicine* 2000;31(2):S86–S97.

Morris, Leesa, Sallybanks, Jo and Makkai, Toni: Sport, Physical Activity and Antisocial Behavior in Youth, Australian Institute of Criminology. 2003. Accessed on 6/1/04, available online at <http://www.activeaustralia.org/facts/AICTIPaper249.pdf>

National Youth Violence Prevention Center: After school programs. Accessed on 6/1/04, available at <http://www.safeyouth.org/scripts/teens/after.asp>

National Parks and Recreation Association and Alliance for Youth Sports: National Summit on raising community standards in sport: examining the violent and abusive behavior in youth sports. Accessed on 6/1/04, available at http://www.nays.org/nays_community_recommendations.pdf

Pate RR, Trost SG, Mullis R, Sallis JF, Wechsler H, Brown DR. Community interventions to promote proper nutrition and physical activity among youth. *Preventive Medicine* 2000;31(2):S138.



Pivarnik, James M." Michigan Governor's Council on Physical Fitness, Health and Sports: Position Statement: Importance of Physical Activity for Children and Youth accessed on 6/1/04, available at <http://www.mdch.state.mi.us/pha/vipf/KidText.htm>

President's Council on Physical Fitness and Sports: Physical Activity & Sport in the Lives of Girls, 2002. Accessed on 6/1/04, available at <http://education.umn.edu/tuckercenter/pcpfs/default.html>

Sabo, D., Miller, K., Farrell, M., Barnes, G., and Melnick, M. (1998), The Women's Sports Foundation Report: Sport and Teen Pregnancy. East Meadow, N Y: The Women's Sports Foundation, accessed on 6/1/04, available online at <http://partnership.hs.columbia>.

Sallis JF, McKenzie TL, Kolody B, Lewis M, Marshall S, Rosengard P. Effects of health-related physical education on academic achievement: project SPARK. *Research Quarterly for Exercise and Sport* 70(2):127-34. 1999.

Sallis JF, Patrick K, France E, Pratt M, Wechsler H, Galuska DA. Interventions in health care settings to promote healthful eating and physical activity in children and adolescents. *Preventive Medicine* 2000;31(2):S112-S120.

Simons-Morton B, Eitel P, Small ML. School physical education: secondary analyses of the School Health Policies and Programs Study. *Journal of Health Education* 1999;30(5):558-564.

TeenPregnancy.org : Fact Sheet: Not Just Another Single Issue: Teen Pregnancy and Athletic Involvement. 2003. Accessed on 6/1/04, available at http://www.teenpregnancy.org/resources/reading/fact_sheets/sports.asp

Wade, Alison: Study shows spots reduce teen pregnancy risk. The Women's Sports Foundation Report: Sport and Teen Pregnancy, National Campaign to Prevent Pregnancy U.S. Department of Health & Human Services 1998. accessed on 6/1/2004 Available online at <http://www.wested.org/ppfy/sportst.htm>

World Health Organization Regional Office for the Mediterranean: Move for Health, World Health Day 2002.

U. S. Department of Health and Human Services. Leisure-time physical activity among adults: United States, 1997-98. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics, 2002.

U.S. Department of Health and Human Services. Physical activity and health: a report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, 1996.

U.S. Department of Health and Human Services . Healthy Youth: Health topic: Physical activity. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, 2004, accessed on 6/1/04, (<http://www.cdc.gov/HealthyYouth/physicalactivity/publications.htm>)

U. S. Department of Health and Human Services: Youth violence: A report of the Surgeon General. : U.S. Department of Health and Human Services, Centers for Disease Control and Prevention 2001. accessed on 6/1/04, available online at <http://www.surgeongeneral.gov/library/youthviolence/default.htm>

Wechsler H, Devereaux RS, Davis M, Collins J. Using the school environment to promote physical activity and healthy eating. *Preventive Medicine* 2000;31(2):S121-S137.

Zill N, Nord CW, Loomis LS. Adolescent time use, risky behavior and outcomes: an analysis of national data. Rockville, MD: Westat, 1995