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Teens Living in Disadvantaged Neighborhoods Lack Access to Parks and Get Less Physical Activity

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California adolescents who live in disadvantaged neighborhoods lack access to parks and get less physical activity relative to teens living in more advantaged neighborhoods. In California, nearly one million adolescents get less than the recommended levels of physical activity (29%), including 240,000 who get no physical activity (7%). In addition, more than 825,000 teens report they have no safe park near home (25%).¹ These problems are more likely to affect teens living in neighborhoods with high concentrations of low-income households, high rates of crowding, high unemployment rates and lower levels of education.

Living in a disadvantaged neighborhood is associated with a number of poor health outcomes including coronary heart disease, disability, mortality and low birth weight. It is also associated with higher prevalence of obesity and lower levels of physical activity among adults. Neighborhood disadvantage may be related to the availability of resources for physical activity. Differences in the

availability of these resources across neighborhoods may contribute to disparities in health behaviors and outcomes such as physical activity and obesity.²

Based on data from the 2003 California Health Interview Survey, the U.S. Census and park location information, this policy brief examines adolescent physical activity

Exhibit 1

Physical Activity and Park Access by Concentration of Poverty in the Neighborhood, Adolescents Ages 12-17, California, 2003

Concentration of Neighborhood Poverty	Regular Physical Activity	No Physical Activity	Park within 400m of Home and Self-reported Safe Park Near Home
	%	%	%
0-24%	74	5	28
25-49%	70	8*	19*
50% and above	67*	10*	19*

*Significantly different from 0-24%, p<0.05

Note: Concentration of neighborhood poverty refers to the percent of households in the census tract with incomes below 200% of the Federal Poverty Level. In 2003, 200% of the Federal Poverty Level was \$24,768 for a family of two and \$37,620 for a family of four.

Source: 2003 California Health Interview Survey, 2000 United States Census and Tele Atlas North America Inc./Geographic Data Technology Inc. created by ESRI.



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Exhibit 2

Physical Activity and Park Access by Crowding in the Neighborhood, Adolescents Ages 12-17, California, 2003

	Regular Physical Activity	No Physical Activity	Park within 400m of Home and Self-reported Safe Park Near Home
Household Crowding in Neighborhood	%	%	%
0-24%	73	6	23
25-49%	69	8	24
50% and above	56*	21*	15*

*Significantly different from 0-24%, $p < 0.05$

Note: Household crowding in neighborhood refers to the percent of households in the census tract with more than one occupant per room.

Source: 2003 California Health Interview Survey, 2000 United States Census and Tele Atlas North America Inc./Geographic Data Technology Inc. created by ESRI.

and access to parks as a function of the characteristics of the neighborhoods in which they live. Access to parks is measured by a combination of living within 400 meters of a park (approximately one-quarter mile), and reporting having a park that is perceived to be safe during the day and is within walking distance of home. Specifically, this brief shows that physical activity and access to parks vary with neighborhood characteristics, including concentration of low-income households, crowding, unemployment rates and level of education. These neighborhood characteristics serve as indicators of neighborhood disadvantage and point to neighborhoods that are likely to have limited resources.

Teens in neighborhoods with a higher proportion of residents living in poverty have less access to parks and are less physically active (Exhibit 1). As the concentration of neighborhood poverty increases from less than one-quarter to more than one-half of households living in poverty, the prevalence of regular physical activity decreases from 74% to 67%, and the prevalence of inactivity doubles from 5% to 10%. In addition, 19% of adolescents living in neighborhoods with a high concentration of low-income residents have a park near home they consider safe compared to 28% of those living in more affluent neighborhoods.

Previous research has shown that areas with higher poverty rates are associated with fewer commercial recreational facilities, fewer safe playgrounds and less physical activity among adults.³

Teens living in neighborhoods with a greater concentration of crowded households are less physically active and have less access to parks (Exhibit 2). As neighborhood crowding increases from less than one-quarter to more than one-half of households being crowded, the prevalence of regular physical activity decreases from 73% to 56%, and the prevalence of inactivity more than triples from 6% to 21%. In addition, only 15% of adolescents in neighborhoods where at least half of the households are crowded have a park near home they consider safe compared to 23% of those living in neighborhoods with less household crowding.

As neighborhood unemployment rates increase, teen physical activity and access to parks tends to decrease (Exhibit 3). As the neighborhood unemployment rate increases from less than 3% to over 8%, rates of regular physical activity decrease from 75% to 65%, and rates of inactivity more than double from 4% to 9%. In addition, as the neighborhood unemployment rate increases, the percent of teens who have a park near home they consider safe decreases by two-thirds from 30% to

Physical Activity and Park Access by Neighborhood Unemployment Rate, Adolescents Ages 12-17, California, 2003

Exhibit 3

	Regular Physical Activity	No Physical Activity	Park within 400m of Home and Self-reported Safe Park Near Home
Neighborhood Unemployment Rate	%	%	%
Less than 3%	75	4	30
3-5%	69*	9*	22*
6-7%	69	9*	16*
8% and above	65*	9*	11*

*Significantly different from "less than 3%," $p < 0.05$

Note: Neighborhood unemployment rate refers to the percent of unemployed persons age 16 and over in the census tract.

Source: 2003 California Health Interview Survey, 2000 United States Census and Tele Atlas North America Inc./Geographic Data Technology Inc. created by ESRI.

11%. In 2003, the unemployment rate in California was 6.8%. Previous research has shown high rates of unemployment are associated with higher rates of obesity.⁴

Teens living in neighborhoods with a lower proportion of college-educated adults tend to get less physical activity and have less access to parks (Exhibit 4). As neighborhood education level increases, the prevalence of regular physical activity increases from 69% to 74%, and inactivity decreases from 8% to 5%; however these differences are not statistically significant. As neighborhood education level increases, the percent of teens with a park near home they consider safe increases from 19% to 35%. Previous research has found that increases in neighborhood

education level are associated with increases in access to facilities for physical activity.⁵

Conclusions and Policy Recommendations

The findings from this study demonstrate that teens who live in disadvantaged neighborhoods are less likely to live near a park they consider safe and less likely to be physically active than teens in more advantaged neighborhoods. Neighborhood concentrations of poverty, household crowding, unemployment, and low levels of education are associated with a smaller proportion of teens having access to a safe park, and with lower rates of physical activity and higher rates of inactivity. Insufficient physical activity contributes to obesity and to risk of complications from

Physical Activity and Park Access by Neighborhood Education Level, Adolescents Ages 12-17, California, 2003

Exhibit 4

	Regular Physical Activity	No Physical Activity	Park within 400m of Home and Self-reported Safe Park Near Home
Percent in Neighborhood with College Education	%	%	%
0-24%	69	8	19
25-49%	72	7	26*
50% and above	74	5	35*

*Significantly different from 0-24%, $p < 0.05$

Note: Neighborhood education level refers to the percent of adults age 25 and older in the census tract with a bachelor's degree or higher.

Source: 2003 California Health Interview Survey, 2000 United States Census and Tele Atlas North America Inc./Geographic Data Technology Inc. created by ESRI.

chronic conditions, such as type 2 diabetes, heart disease and hypertension.⁶

The characteristics of neighborhoods where adolescents live can encourage or discourage health behaviors such as physical activity. For example, availability of facilities and opportunities for physical activity are associated with more physical activity. Lower rates of physical activity among adolescents living in disadvantaged neighborhoods are likely due in part to the lack of access to safe parks and other facilities for physical activity. Other research has shown that proximity to a park is one of the most important factors affecting use of parks and physical activity in urban, minority communities. Furthermore, disadvantaged neighborhoods are less likely to have the tax-base resources (typically allocated by municipal governments) to develop and maintain parks and other facilities that provide opportunities for physical activity.⁷

Addressing neighborhood disadvantage is important in the long term, both to increase physical activity and to improve the lives and life opportunities of California's adolescents. However, steps can be taken in the short term to promote increased physical activity. Making improvements to park safety and creating public awareness about such efforts will eliminate a critical barrier to park access and physical activity therein. In California, 220,000 adolescents report they have a park within walking distance of home, but do not perceive that park to be safe during the day. Increased and supervised programming at parks, coupled with community-driven public safety strategies jointly implemented by law enforcement agencies, park and recreation staff, residents and other community stakeholders, can make parks more secure and increase use of these parks.

In addition, some parks, especially in low-income neighborhoods, have inadequate facilities for physical activity, lack professionally-trained staff and lack programs that attract teens. Properly maintaining existing parks and recreational facilities and offering programs that engage adolescents with trained staff can improve the quality of these facilities and make them more attractive to teenagers. Increasing park and recreation departments' general operating budgets to allow for additional programming, staffing and maintenance in disadvantaged communities would help eliminate structural barriers to park usage and physical activity.

However, low-income neighborhoods are less likely than more affluent communities to have parks and other recreational facilities. Investing in the development of new parks and recreational facilities in disadvantaged areas currently lacking them increases opportunities for physical activity for teens living in these areas. Increasing opportunities, in turn, leads to increased rates of physical activity.⁸ Communities can also develop other places for recreation and physical activity through policies such as joint use agreements between public schools and park and recreation departments. Making school facilities (such as gymnasiums, sports fields or playgrounds) available for use by the community after school and on weekends provides additional opportunities for physical activity utilizing existing structures, thereby reducing the costs of making recreational facilities accessible to more young people.

Such policies can increase the opportunities for physical activity available to California's adolescents, particularly those living in disadvantaged neighborhoods.

Data Source

All statements in this report that compare rates for one group with another group reflect statistically significant differences ($p < 0.05$) unless otherwise noted.

The findings in this brief are based primarily on data from the 2003 California Health Interview Survey (CHIS 2003). CHIS 2003 completed interviews with 4,010 adolescents ages 12-17, drawn from every county in the state, in English, Spanish, Chinese (both Mandarin and Cantonese), Vietnamese and Korean. CHIS 2003 provides extensive information about adolescent physical activity for the state of California. Regular physical activity is defined as performing at least 20 minutes of vigorous activity on three or more of the last seven days, or at least 30 minutes of moderate activity on five or more of the last seven days. Adolescents were considered to get no physical activity if they reported performing no vigorous activity and no moderate activity in the past week. Adolescents were considered to have access to a park if they had a park within 400m of their homes based on GIS-measured Euclidian distance, and also reported that there was a park or open space within walking distance of home that they perceived to be safe during the day. The park location information is part of a geospatial database using park locations from Tele Atlas North America Inc./Geographic Data Technology Inc. and created by ESRI. Neighborhood characteristics are based on 2000 Census data for the census tract in which the adolescent lives.

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Notes

- 1 Babey SH, Brown ER, Hastert TA. *Access to Safe Parks Helps Increase Physical Activity Among Teenagers*. Dec 2005.
- 2 Winkleby M, Sundquist K, Cubbin C. Inequities in CHD Incidence and Case Fatality by Neighborhood Deprivation. *American Journal of Preventive Medicine*. Feb 2007;32(2):97-106.
Diez-Roux AV, Nieto FJ, Muntaner C, et al. Neighborhood environments and coronary heart disease: a multilevel analysis. *American Journal of Epidemiology*. Jul 1 1997;146(1):48-63.
Ross CE, Mirowsky J. Neighborhood disadvantage, disorder, and health. *Journal of Health and Social Behavior*. Sep 2001;42(3):258-276.
Winkleby MA, Cubbin C. Influence of individual and neighbourhood socioeconomic status on mortality among black, Mexican-American, and white women and men in the United States. *Journal of Epidemiology and Community Health*. Jun 2003;57(6):444-452.
Pearl M, Braveman P, Abrams B. The relationship of neighborhood socioeconomic characteristics to birthweight among five ethnic groups in California. *American Journal of Public Health*. Nov 2001;91(11):1808-1814.
Yen IH, Kaplan GA. Poverty area residence and changes in physical activity level: evidence from the Alameda County Study. *American Journal of Public Health*. Nov 1998;88(11):1709-1712.
Glass TA, Rasmussen MD, Schwartz BS. Neighborhoods and obesity in older adults: the Baltimore memory study. *American Journal of Preventive Medicine*. Dec 2006;31(6):455-463.
Monden CW, van Lenthe FJ, Mackenbach JP. A simultaneous analysis of neighbourhood and childhood socio-economic environment with self-assessed health and health-related behaviours. *Health Place*. Dec 2006;12(4):394-403.
Gordon-Larsen P, Nelson MC, Page P, Popkin BM. Inequality in the built environment underlies key health disparities in physical activity and obesity. *Pediatrics*. Feb 2006;117(2):417-424.

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- 3 Yen IH, Kaplan GA. Poverty area residence and changes in physical activity level: evidence from the Alameda County Study. *American Journal of Public Health*. Nov 1998;88(11):1709-1712.
Powell LM, Slater S, Chaloupka FJ, Harper D. Availability of physical activity-related facilities and neighborhood demographic and socioeconomic characteristics: a national study. *American Journal of Public Health*. Sep 2006;96(9):1676-1680.
Cradock AL, Kawachi I, Colditz GA, et al. Playground safety and access in Boston neighborhoods. *American Journal of Preventive Medicine*. May 2005;28(4):357-363.
- 4 U.S. Department of Labor, Bureau of Labor Statistics. Available at: <http://www.bls.gov/lau/lastrk03.htm>. Accessed December 7, 2006.
Monden CW, van Lenthe FJ, Mackenbach JP. A simultaneous analysis of neighbourhood and childhood socio-economic environment with self-assessed health and health-related behaviours. *Health Place*. Dec 2006;12(4):394-403.
Cubbin C, Hadden WC, Winkleby MA. Neighborhood context and cardiovascular disease risk factors: the contribution of material deprivation. *Ethnicity & Disease*. Fall 2001;11(4):687-700.
- 5 Gordon-Larsen P, Nelson MC, Page P, Popkin BM. Inequality in the built environment underlies key health disparities in physical activity and obesity. *Pediatrics*. Feb 2006;117(2):417-424.
- 6 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.
- 7 Babey SH, Brown ER, Hastert TA. *Access to Safe Parks Helps Increase Physical Activity Among Teenagers*. Dec 2005.
Gordon-Larsen P, Nelson MC, Page P, Popkin BM. Inequality in the built environment underlies key health disparities in physical activity and obesity. *Pediatrics*. Feb 2006;117(2):417-424.
Cohen DA, McKenzie TL, Sehgal A, Williamson S, Golineli D, Lurie N. How Do Public Parks Contribute to Physical Activity? *American Journal of Public Health*. 2007 Jan 31; [Epub ahead of print].
Powell LM, Slater S, Chaloupka FJ, Harper D. Availability of physical activity-related facilities and neighborhood demographic and socioeconomic characteristics: a national study. *American Journal of Public Health*. Sep 2006;96(9):1676-1680.
The Trust for Public Land. No Place to Play. Available at: http://www.tpl.org/tier3_cd.cfm?content_item_id=14565&folder_id=266. Accessed February 10, 2005.
- 8 Sallis JF, Bauman A, Pratt M. Environmental and policy interventions to promote physical activity. *American Journal of Preventive Medicine*. Nov 1998;15(4):379-397.
Gordon-Larsen P, Nelson MC, Page P, Popkin BM. Inequality in the built environment underlies key health disparities in physical activity and obesity. *Pediatrics*. Feb 2006;117(2):417-424.