

The Effect of Environment on Adolescents' Physical Activity

Findings from the 2003 California Health Interview Survey

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Background

- ▶ Regular physical activity is a key factor in preventing obesity and chronic health conditions
 - ▶ Physical inactivity contributes to obesity and to complications from chronic conditions such as Type 2 diabetes, heart disease, hypertension and some cancers
- ▶ Lack of physical activity is associated with decreased mental alertness, lower academic achievement, higher levels of stress, higher rates of disability, depression, and diminished quality of life
- ▶ Physical activity occurs in the context of people's lives, their communities and their work
- ▶ Physical activity is influenced by the environment



Research objectives

- ▶ Estimate the prevalence of physical activity among adolescents
 - ▶ By demographic factors
 - ▶ By environmental factors
- ▶ Identify environmental factors and modifiable policies that are associated with physical activity



Study design

▶ Data source

- ▶ 2003 California Health Interview Survey (CHIS 2003), a biennial RDD survey of California's population living in households

▶ Sample

- ▶ 4,010 adolescents, age 12-17, interviewed after obtained permission from a parent
- ▶ Total sample in 2003 was more than 42,000 households

▶ Analyses

- ▶ Descriptive analyses of the prevalence of physical activity among adolescents
- ▶ Multivariate regressions to determine factors associated with physical activity for adolescents



California Health Interview Survey

- ▶ CHIS is a random-digit dial (RDD) telephone survey, providing a representative sample of the state's non-institutionalized population
 - ▶ CHIS 2003 interviewed over 42,000 households in California
- ▶ In households with adolescents (age 12-17), CHIS interviewed one sample adolescent
- ▶ Interviews were conducted between August 2003 and February 2004 in five languages



Model for regression analyses

▶ Outcome variables

- ▶ Regular physical activity
 - ▶ Vigorous physical activity three or more days/week, or moderate physical activity five or more days/week
- ▶ No physical activity
 - ▶ No vigorous activity or moderate activity in the past week

▶ Predictor variables

- ▶ Socio-demographic factors
 - ▶ Age, gender, race/ethnicity, family income (as percent of federal poverty level)
- ▶ Environmental factors
 - ▶ Self-reported physical education requirements at school, self-reported access to safe park or open space



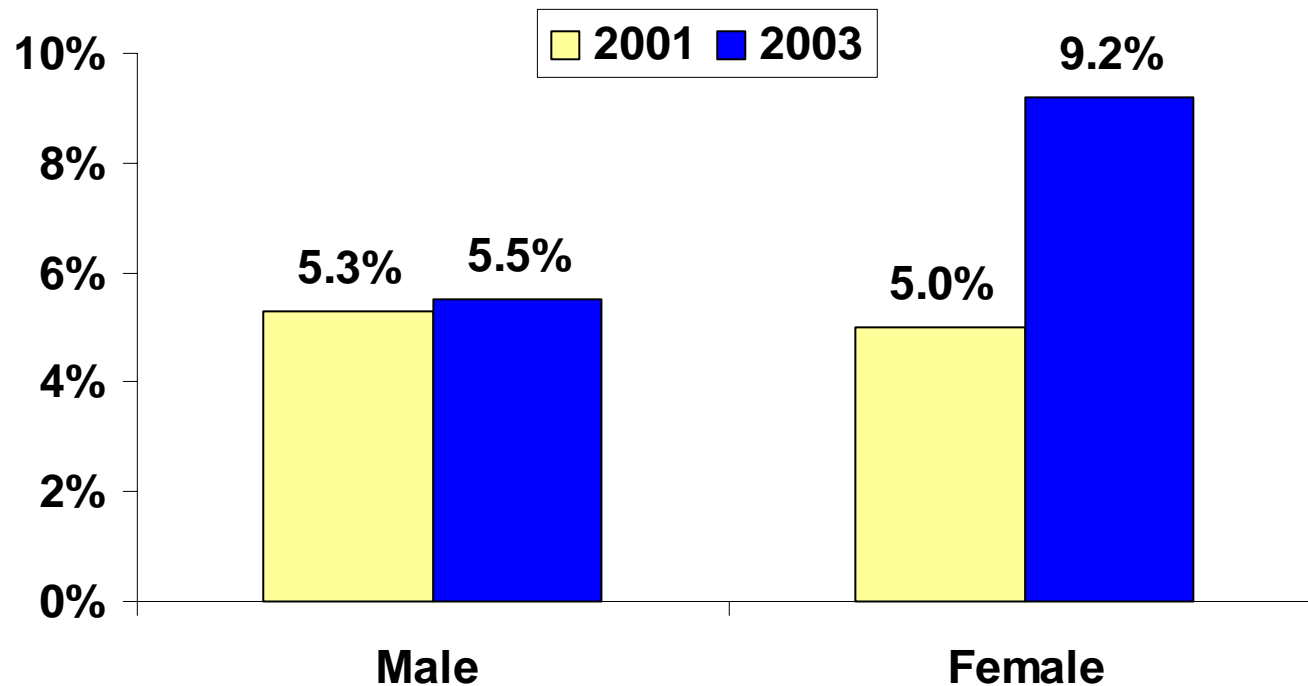
Overview of descriptive results

- ▶ The percent of adolescents getting no physical activity increased from 5.2% in 2001 to 7.3% in 2003 in California
 - ▶ 240,000 California adolescents reported in 2003 that they get no physical activity
- ▶ Levels of physical activity vary by:
 - ▶ Gender
 - ▶ Race/ethnicity
 - ▶ PE requirements
 - ▶ Access to a safe park or open space



A larger proportion of girls was inactive in 2003 than in 2001

**Percent Engaging in No Physical Activity by Gender and Year,
Adolescents Ages 12-17, California**



Source: 2003 California Health Interview Survey

Adolescents of color were less likely to get regular activity and more likely to get no activity

Percent Engaging in Regular Physical Activity and No Physical Activity by Race/Ethnicity, Adolescents Ages 12-17, California, 2003

	Regular Physical Activity	No Physical Activity
Race/Ethnicity		
White	76.4%	4.1%
Latino	68.1%*	9.5%*
Asian	62.3%*	8.3%
African American	62.7%*	12.3%*

* Significantly different from whites (p<0.05)

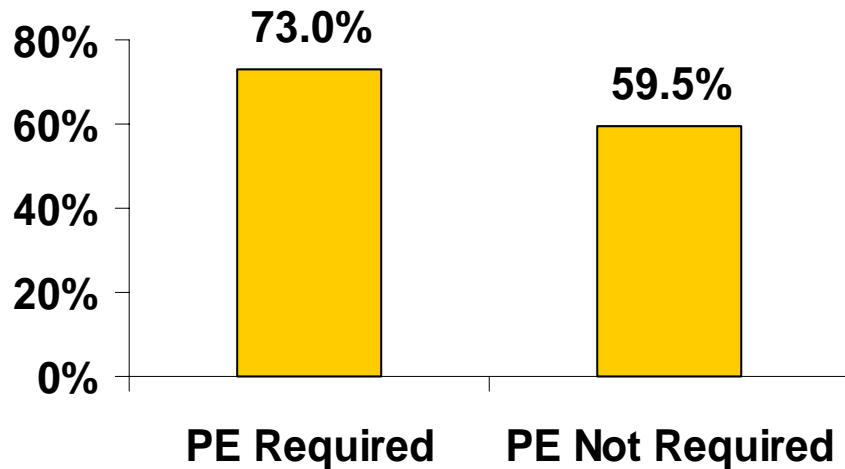


Source: 2003 California Health Interview Survey

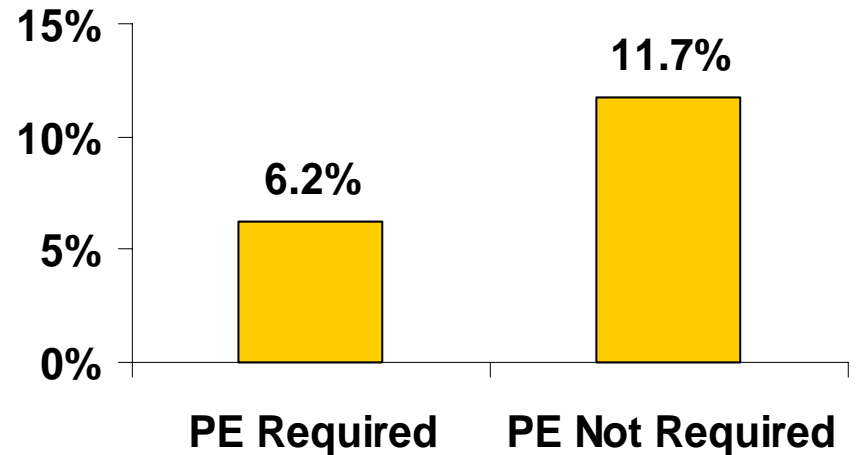
Schools that require PE associated with more physical activity, less inactivity

Percent Engaging in Regular Physical Activity and No Physical Activity by Physical Education (PE) Requirements, Adolescents Ages 12-17, California, 2003

Regular Physical Activity



No Physical Activity



Source: 2003 California Health Interview Survey

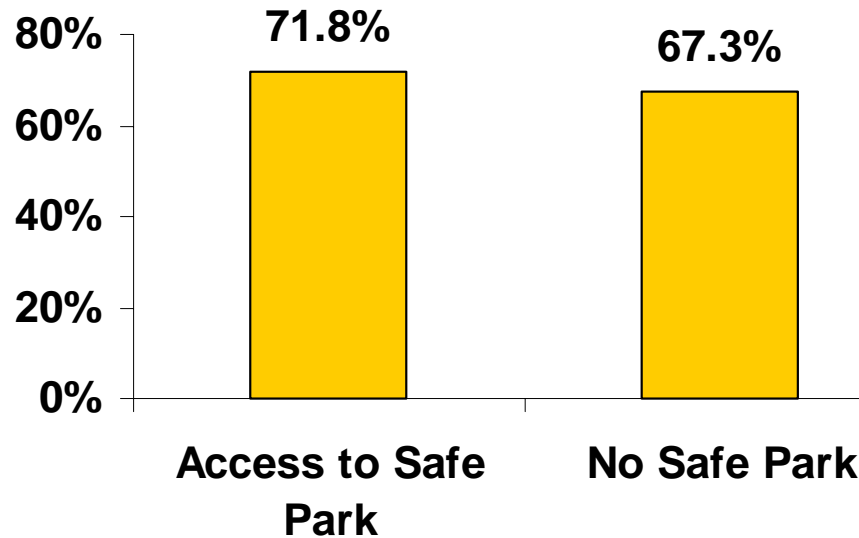
- ▶ 1 in 7 California adolescents report that their school does not require physical education



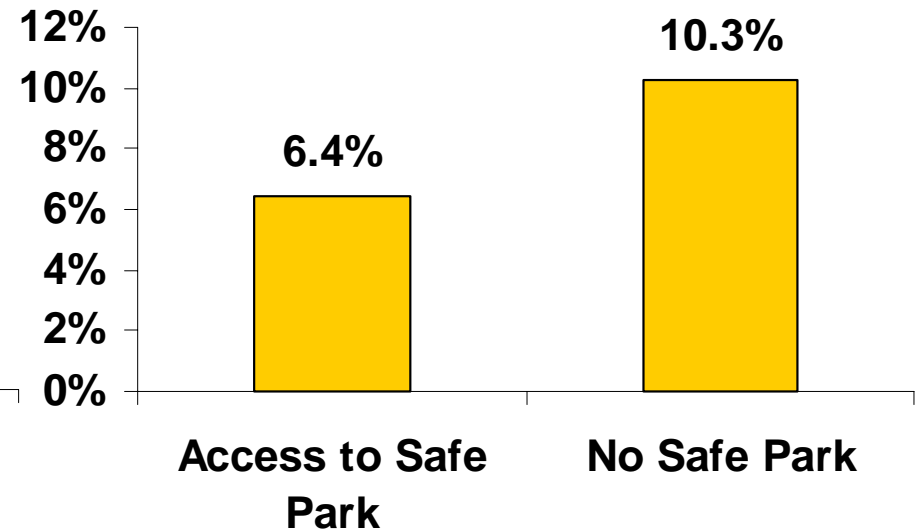
Access to safe parks is associated with lower rates of no physical activity

Percent Engaging in Regular Physical Activity and No Physical Activity by Access to Safe Park or Open Space, Adolescents Ages 12-17, California, 2003

Regular Physical Activity



No Physical Activity



Source: 2003 California Health Interview Survey

- ▶ 1 in 4 California adolescents report that there is no safe park or open space near their home



Recap of descriptive results

- ▶ The prevalence of No Physical Activity among girls nearly doubled between 2001 and 2003 (from 5.0% to 9.2%), but was similar among boys (5.3% and 5.5%)
- ▶ Girls are less active than boys
- ▶ Latinos, Asians, and African Americans are less active than white adolescents



Recap of descriptive results

- ▶ Requiring PE is associated with both higher rates of Regular Physical Activity and lower rates of No Physical Activity
- ▶ Having access to a safe park or open space is associated with lower rates of No Physical Activity, but was not associated with rates of Regular Physical Activity



Adjusting for demographics, schools that require PE associated with regular physical activity

Factors Associated with Regular Physical Activity, Adolescents Ages 12-17, California, 2003

Variable	Odds Ratio	95% CI
Age	0.87*	0.82-0.93
Female (vs. Male)	0.68*	0.55-0.84
Race/ethnicity (vs. white)		
Latino	0.75*	0.57-0.97
Asian	0.52*	0.36-0.76
African American	0.52*	0.35-0.78
PE Requirements (vs. PE required)		
PE not required	0.65*	0.50-0.86

*p < 0.05

Note: model is adjusted for family income



Source: 2003 California Health Interview Survey

Adjusting for demographics, PE not required and no safe park associated with no physical activity

Factors Associated with No Physical Activity, Adolescents Ages 12-17, California, 2003

Variable	Odds Ratio	95% CI
Female (vs. Male)	1.72*	1.15-2.55
Race/ethnicity (vs. white)		
Latino	2.31*	1.47-3.61
Asian	1.80	0.88-3.71
African American	3.17*	1.62-6.19
PE Requirements & Access to Safe Park (vs. PE required & Safe park)		
PE not required & No safe park	3.16*	1.57-6.35
PE required & No safe park	1.20	0.74-1.95
PE not required & Safe park	1.20	0.67-2.13

*p < 0.05

Note: model is adjusted for age and family income



Source: 2003 California Health Interview Survey

Multivariate results – Regular Physical Activity

- ▶ Females are less likely to engage in Regular Physical Activity than males
 - ▶ Girls in urban and rural areas, but not in suburban areas, less likely to get regular physical activity
- ▶ Teens of color are less likely to engage in Regular Physical Activity than whites
- ▶ Teens whose schools require PE are more likely to engage in Regular Physical Activity
 - ▶ Requiring PE increased probability that teens living in urban areas would get regular activity (but not significant for teens in suburban or rural areas)



Multivariate results – No Physical Activity

- ▶ Females are more likely than males, and Latinos and African Americans are more likely than whites to get No Physical Activity
 - ▶ Females in urban areas appear to be at greater risk than those in suburban or rural areas
 - ▶ Latinos in urban and rural areas appear to be at greater risk than those in suburban areas



Multivariate results – No Physical Activity

- ▶ When Access to Safe Parks is examined separately from PE requirements
 - ▶ Access to Safe Parks is associated with No Physical Activity for teens living in apartments, but not for those living in houses
 - ▶ Access to Safe Parks is associated with No Physical Activity for teens living in urban areas, but not for those living in rural or suburban areas



Conclusions / Policy implications

- ▶ Requiring PE associated with higher rates of regular physical activity and lower rates of no physical activity
- ▶ Assuring access to a safe park or open space associated with lower rates of no physical activity
 - ▶ Does not appear to be related to getting regular physical activity — but our study did not measure any characteristics of the parks near adolescents except their safety
- ▶ Requiring PE and assuring access to a safe park or open space even more important predictors of physical activity for...
 - ▶ Girls
 - ▶ Adolescents of color
 - ▶ Teens living in apartments or in urban areas



CHIS is “Making California’s Voices Heard on Health”



www.chis.ucla.edu

CHIS provides free access to statewide and local data through fast, user-friendly Web-based data query system — [AskCHIS](#):



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