Acknowledgements

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- Funding for this study:
  - The California Endowment
  - Robert Wood Johnson Foundation

- Major funding for data collection on physical activity and diet in the 2003 California Health Interview Survey:
  - The California Endowment
  - Robert Wood Johnson Foundation
  - National Cancer Institute
**Background**

- Insufficient physical activity contributes to obesity, type 2 diabetes, heart disease and hypertension

- Availability of places to engage in physical activity influences activity levels in adults

- Findings are inconsistent for adolescents

- Availability of places for physical activity may be more important for some groups of adolescents than for others
Objectives

- Examine the association of access to a safe park with physical activity

- Determine whether the relationship between physical activity and access to parks among adolescents differs by sociodemographic, housing and neighborhood characteristics
Study design

Data: 2003 California Health Interview Survey (CHIS)

- 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, CHIS interviewed one randomly selected adolescent

Sample: 4,010 adolescents ages 12-17

Analyses

- Descriptive analyses of physical activity among adolescents
- Logistic regressions to determine factors associated with physical activity for adolescents
Hypotheses

- Having access to a safe park is positively associated with regular physical activity and negatively associated with inactivity for:
  - teens living in urban but not rural areas
  - those living in apartments but not houses
  - those living in unsafe neighborhoods but not safe neighborhoods
  - those from lower-income but not higher-income families

- The association between access to a safe park and physical activity may vary by race/ethnicity
Outcome Variables

- **Regular physical activity**
  - At least 20 min of vigorous activity three or more days/week, or at least 30 min of moderate activity five or more days/week

- **Physical inactivity**
  - No vigorous activity or moderate activity in the past week
Potential Correlates of Physical Activity

- Access to safe park
  - Adolescent reports park within walking distance of home and considers park safe during the day

- Socio-demographic factors
  - Age, gender, race/ethnicity, family income (as percent of federal poverty level)

- Environmental factors
  - Urbanicity, housing type, perceived neighborhood safety
Stratified Regression Models

- Does the relationship between access to parks and physical activity differ by sociodemographic, housing and neighborhood characteristics?

- Stratified multivariate logistic regression models
  - Urban vs. rural areas
  - Multi-unit apartment buildings vs. houses
  - Neighborhoods perceived as unsafe vs. safe
  - Lower-income family vs. higher-income
  - Race/ethnicity
Descriptive Results

- 71% of adolescents engage in regular physical activity
- 7% are inactive
- 25% report having no access to a safe park

In bivariate analyses:
- Access to a safe park has weak association with higher proportion engaging in regular physical activity
- Access to a safe park is associated with lower proportion being inactive
Access to safe parks is associated with lower rates of physical inactivity

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

Access to Safe Park

No Safe Park

Access to Safe Park

No Safe Park

* p<0.10  **p<0.05

Source: 2003 California Health Interview Survey
### Association of Access to Safe Park with Physical Activity Differs by Adolescent Characteristics

**Association of Access to Safe Park with Physical Activity, Adolescents age 12-17**

<table>
<thead>
<tr>
<th>Population included in Model</th>
<th>Regular Physical Activity</th>
<th>Physical Inactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>1.31 (1.01-1.69)*</td>
<td>0.55 (0.36-0.84)*</td>
</tr>
<tr>
<td>Apartment</td>
<td>1.39 (0.89-2.19)</td>
<td>0.48 (0.25-0.95)*</td>
</tr>
<tr>
<td>Unsafe neighborhood</td>
<td>1.21 (0.72-1.99)</td>
<td>0.43 (0.20-0.92)*</td>
</tr>
<tr>
<td>Low income</td>
<td>1.32 (0.98-1.78)</td>
<td>0.59 (0.36-0.97)*</td>
</tr>
</tbody>
</table>

Models adjusted for age, gender, race, urbanicity, housing type, neighborhood safety and family income unless that factor was used as a stratifying variable.

* p<0.05

Source: 2003 California Health Interview Survey
### Association of Access to Safe Park with Physical Activity by Race/ethnicity

Association of Access to Safe Park with Physical Activity, Adolescents age 12-17

<table>
<thead>
<tr>
<th>Population included in Model</th>
<th>Regular Physical Activity</th>
<th>Physical Inactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latino</td>
<td>1.28 (0.86-1.91)</td>
<td>0.67 (0.36-1.24)</td>
</tr>
<tr>
<td>Asian</td>
<td>1.07 (0.48-2.43)</td>
<td>0.34 (0.12-0.97)*</td>
</tr>
<tr>
<td>African American</td>
<td>0.83 (0.37-1.89)</td>
<td>2.09 (0.60-7.34)</td>
</tr>
<tr>
<td>White</td>
<td>1.05 (0.76-1.46)</td>
<td>0.55 (0.30-0.99)*</td>
</tr>
</tbody>
</table>

Models adjusted for age, gender, urbanicity, housing type, neighborhood safety and family income

* p<0.05

Source: 2003 California Health Interview Survey
Recap of Results

Access to a safe park was positively associated with regular physical activity and negatively associated with inactivity for adolescents in urban areas, but not rural areas.

Adolescents with access to a safe park are less likely to be inactive than those without access for adolescents in:

- Apartments (but not houses)
- Neighborhoods perceived as unsafe (but not those perceived as safe)
- Lower-income families (but not higher-income families)
- Asian and white adolescents (but not Latino or African American)
Limitations

► Self-report of physical activity may overestimate actual prevalence.

► Access to a safe park based on self-report and may not be indicative of objective availability and safety.

► Only examined access to parks and open spaces, not other kinds of recreational facilities.
Conclusions

- The relationship between physical activity and access to safe parks differs depending on adolescents’ sociodemographic, housing and neighborhood characteristics.

- Expanding park access and improving safety, particularly for urban adolescents, is a promising strategy for promoting physical activity in this age group.