

## **The Effect of Providing a Safe Play Space on Physical Activity in Inner-City Children**

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This project (R01 HL073774-01) was conducted with a grant from NHLBI under RFA-DK-01-021 *Environmental Approaches to Obesity Prevention*.

### **Background**

Lack of safety in a neighborhood may reduce the frequency of physical activity outdoors, especially among children in the inner city. We developed and evaluated an environmental intervention to increase physical activity in children by providing a safe play space.

### **Objectives**

To measure the impact of providing a safe play space in a low-income urban neighborhood on the physical activity of children.

### **Methods**

This was a 3-year pilot project in which there is a single intervention neighborhood and a single matched control neighborhood, each of which surrounded a public elementary school. The intervention consisted of opening the schoolyard (which had been locked before the study), providing equipment, and providing adult supervision on weekdays after school (3:00 PM to 5:30 PM) and on Saturdays (10:00 AM - 3:00 PM). The equipment included balls, hula hoops, jump ropes, basketball goals and an installed play structure. Adult attendants supervised children to provide safety, but did not organize, require, or even suggest specific activities. Any child between the second and eighth grade with written parental permission was allowed to use the schoolyard regardless of whether he or she attended the school. The schoolyard in the control neighborhood remained fenced and locked.

The effect of the intervention was measured by: 1) attendance at the intervention schoolyard, 2) direct observations of the physical activity of children in the intervention schoolyard using SOPLAY, 3) direct observations of the number and physical activity of children in the neighborhoods surrounding both the intervention and control schoolyards, using a modification of SOPLAY, and 4) annual surveys of children enrolled at the two elementary schools to assess their sedentary activities.

### **Results**

**Participation:** The mean daily attendance was 71.4 on weekdays when school was in session, 25.8 on weekends during the school year, 27.9 on weekdays during the summer, and 14.2 on weekends during the summer. Of the 367 children enrolled in grades 2-5 in the intervention school in the first school year, 265 (72%) visited the schoolyard at least one time over 12 months, and among these students, the mean number of days attending was 35.8.

**Physical Activity in Schoolyard:** Of the children observed in the schoolyard, 33% were recorded as “very active” and 33% as “walking”, for a total of 66% active. The most frequent activities were walking/running, basketball, playing on the play structure, and playing foursquare.

**Physical Activity in Surrounding Neighborhoods:** Neighborhood and schoolyard observations were conducted for one month before the intervention began and then for every quarter afterwards. In the month before the intervention began, the mean number of children observed to be outdoors and physically active in the intervention neighborhood was 3% lower than in the control neighborhood. In seven of the eight quarters after the intervention began, there were more children outdoors and physically active in the intervention neighborhood than in the control neighborhood, and over the entire two-year follow-up period, there were 20% more children observed outdoors and physically active in the intervention neighborhood than in the control neighborhood (mean 42 vs. 34 per day).

**Self-Reported Sedentary Activities:** In preliminary analyses, at baseline, children in the intervention school were significantly more likely than children in the control school to report watching television (92% vs. 83%,  $p<.01$ ); there were no statistically significant differences in reports of watching movies/DVDs (60% vs. 61%), or playing video games (62% vs. 55%,  $p=.15$ ) or computer games (46% vs. 42%). One year later children in the intervention school were *more* likely to report playing video games (63% vs. 49%,  $p<.01$ ) or computer games (50% vs. 40%,  $p=.03$ ), but were similar in watching television (91% vs. 86%) and movies/DVDs (61% vs. 58%). Two years later children in the intervention school were *less* likely to report watching movies/DVDs (50% vs. 70%,  $p<.01$ ) or playing video games (48% vs. 61%,  $p=.02$ ), and were similar in watching television (88% vs. 92%) and playing computer games (48% vs. 44%).

## **Conclusions**

After a safe play space was provided in a low-income urban neighborhood many children used it for free play and were physically active while using it. Children using the play space were not just displaced from outdoor play elsewhere in the neighborhood but instead represented an increase in the total number of children outdoors and physically active; in fact the results suggest that provision of the safe play space may have increased play in the surrounding neighborhood. The effect of this physical activity on sedentary activities is not clear.