

SAFE NEIGHBORHOODS MAKE CHILDREN MOVE; RESULTS FROM THE SPATIAL PLANNING AND CHILDREN'S EXERCISE (SPACE) STUDY

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Background and Aim: The effectiveness of urban planning interventions for physical activity (PA) levels and obesity is largely unknown. This study aimed to examine the effect of changes in the built environment on walking and cycling in children.

Methods: The population involved 448 children (aged 6- 12 years) in 2004 and 292 children in 2008 from five Dutch neighborhoods that were partially restructured between 2004 and 2008, and five control neighborhoods. In 2004 and 2008, walking and cycling behavior was assessed by a 7-day physical activity diary, and built environmental characteristics were assessed by neighborhood observation. Anthropometric values were also collected. Multilevel linear regression analyses were conducted to identify environmental determinants of children's walking and cycling behavior. Analyses were adjusted for age, sex, parental education level, and ethnicity.

Results: In 2004, children made on average 13.3 walking and 6.6 cycling trips per week for transportation; 3.6 walking and 1.5 cycling trips per week to school; and 0.7 walking trip per week for recreation. Cross-sectional analyses showed that in 2004 both commuting modes were positively associated with the frequency of pedestrian crossings and parallel parking spaces in the neighborhood. About 30% of the variance in walking and cycling for transportation could be explained by the number of recreation facilities in the neighborhood and the walking and cycling infrastructure of the neighborhood. Longitudinal analyses indicate that improving the traffic infrastructure (slower traffic, less traffic crossings) have a positive effect on PA in children.

Conclusions: Built environmental correlates of children's walking and cycling behavior differ by purpose and by commuting mode implying a behavior-specific approach for interventions. Physical activity in children may be improved by traffic safety measures.