INTERVENTION TABLE 17

Availability of Parks, Playgrounds, Trails and Recreation Centers

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Parks (Including open play areas, green spaces, and beaches)-United States						
Tester, Baker (2009) California	Renovation of two parks including replacement of dirt fields with artificial turf, new fencing, landscaping, lighting and picnic benches. Park A also received permanent soccer goals and Park B restored a walkway around the field. ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* 1. Expanded hours of park operation 2. Professional training and skills development for park and recreation program staff 3. Expanded park programming	***DESIGN:*** Before and after study ***DURATION:*** 1 year ***SAMPLE SIZE:*** 4889 children, teens, adults and seniors observed in 3 parks (2 newly renovated, 1 control) in a lower income neighborhood in San Francisco, California Spring 2006; 1006 people observed Spring 2007; 3883 people observed ***PRIMARY OUTCOME:*** Moderate and vigorous intensity physical activity (PA) ***MEASURES:*** 1. System for Observing Play and Recreation in Communities [SOPARC] (direct observation of physical activity and park use) ***DATA COLLECTION:*** Observations using SOPARC were conducted from May to June, in 2006 and again in 2007. Parks were divided into predetermined sections (target areas) where observers performed rapid visual scans at specified times per day. Each scan was completed within a few minutes. Scans were performed 8 times during the day for 7 consecutive days in all target areas of each park. Observers went through a 2 day training session prior to each data collection period. ***LIMITATIONS:*** Observers were not blinded to the study, and it is possible that they were biased towards higher levels of physical activity; inter-observer agreement in the follow-up was low; the length of observation (7 days) each year was relatively limited	Lower income ***ELIGIBILITY:*** Parks were eligible and thus chosen for renovations based on the following criteria: condition, typical use, ability to increase field capacity with artificial turf, community value of the parks, and existing programming. ***EXPOSURE/ PARTICIPATION:*** Not reported	***LEAD AGENCY:*** The research team was from the University of California, Berkley and Team Up for Youth, City of San Francisco, City Fields Foundation, San Francisco Recreation and Parks Department, The Department of Children, Youth, and Families, and neighborhood community-based organizations. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** The renovations were a public-private venture undertaken by the City Fields Foundation and the City of San Francisco. Park B was also part of the RecConnect Initiative, which was a collaboration between the San Francisco Recreation and Parks Dept., the Dept. of Children, Youth and Families and neighborhood community-based organizations. ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** 1. Artificial turf 2. New fencing 3. Landscaping materials 4. Lighting 5. Picnic benches 6. Soccer goals 7. Materials to restore the walkway 8. Personnel for expanded park hours and programming 9. Materials to train park staff 10. Labor for improvements to the parks ***FUNDING:*** Team Up For Youth and the Robert Wood Johnson Foundation Health and Society Scholars Program at the University of California San Francisco and University of California Berkeley. ***STRATEGIES:*** Not reported	***PHYSICAL ACTIVITY:*** 1. In the two intervention parks combined, there were 1681 physically active visitors in the follow-up week, compared to a total of 360 at baseline. 2. In Park A (renovated park), there was a significant increase in the mean number of moderately active individuals observed from baseline to follow-up for both males (from 1.51 to 6.07, p≤0.05) and females (from 0.13 to 1.73, p≤ 0.05). Observations also found a significant increase in vigorous activity in males (from 1.04 to 2.21, p≤0.05) and females (from 0 to 0.29, p≤0.05). 3. In Park B (renovated park), there was a significant increase in the mean number of moderately active individuals observed from baseline to follow-up for both males (from 1.64 to 8.92, p≤0.05) and females (from 1.58 to 5.30, p≤ 0.05). Observations also found a significant increase in vigorous activity in males (from 0.36 to 3.08, p≤0.05) and females (from 0.29 to 1.1, p≤0.05). 4. In the control park, only the number of moderately active males increased significantly from baseline to follow-up (from 1.84 to 4.23, p≤0.05). 5. The overall proportion of sedentary visitors to the playfields increased in both intervention parks and decreased in the control park. In Park A, there was an increase in the number of sedentary males (from 2.02 to 10.46) and females (from 0.11 to 3.61, p≤0.05 for both). The same increase was seen in Park B for sedentary males (from 0.64 to 8.93) and females (from 0.2 to 5.02, p≤0.05 for both). The decrease in the number of sedentary individuals in the control park was not significant. ***PARK USE:*** 6. There was a significant increase in playfield use at follow up, from 28 children counted in both intervention playfields combined at baseline, to 199 and 261 children, who visited the playfields in Parks A and B. There was a nearly five-fold increase in the total adult visitors to the playfield in Park A, and a nine-fold increase in the total adult visitors to Park B. There were almost no seniors present on the playfield at baseline at all parks, and they increased significantly at Park B.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Floyd, Spengler (2008) Florida, Illinois	Neighborhood availability of parks ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 9,456 park users, 7,043 from 10 parks in Tampa, Florida, and 2,413 from 18 parks in Chicago, Illinois ***PRIMARY OUTCOMES:*** Moderate and vigorous physical activity, walking, and sedentary behavior ***MEASURES:*** 1. Modified version of the System for Observing Play and Leisure Activity in Youth [SOPLAY] age, gender, activity level [sedentary, walking/ moderate, vigorous]) 2. Geographical Information System [GIS] software and Topologically Integrated Geographic Encoding and Referencing [TIGER] census files (location of parks, ethnic composition [neighborhood level], neighborhood income) ***DATA COLLECTION:*** Activity zones for all parks and their boundaries were mapped by 2 members of the research team prior to observations. Zones usually coincided with established recreation use areas (e.g., playgrounds). Trained observers recorded physical activity in the parks from 10am to 6pm (Friday through Sunday) during the spring (Tampa: March to April) and early summer (Chicago: May to June) of 2005 (Cohen's kappa= 0.79-0.97). Following protocol, separate scans were made for girls, boys, women, and men. Four scanning periods were conducted for each zone (2 in AM, 2 in PM). Physical activity codes were converted to energy expenditure (kcal/kg/min), providing a second measure for physical activity, using previously validated codes. Energy expenditure was estimated by summing the number of individuals in sedentary, walking, and vigorous categories and then multiplying by their respective constants. ***LIMITATIONS:*** Observations were momentary time sampling; energy expenditure measures were not precise; observations did not represent early morning, weekday, and seasonal park use; types of patterns of physical activity were limited to coverage; sampling did not achieve ethnic generalizability between the two cities	General Population Black, White, and Hispanic populations with low to mid/high income (target) Tampa: African American=42-70%; Hispanic=49-61%; White=72-88%; median income =$27,321-50,368; poverty=14-28% Chicago: African American=60-99%; Hispanic=70-93%; White=53-84%; median income =$27,776-46,055; poverty=10-34% (block groups for area park users) ***ELIGIBILITY:*** Not reported ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Research teams were from North Carolina State University, the University of Florida, the University of Hawaii, and the U.S. Forest Service in Evanston, Illinois ***THEORY/ FRAMEWORK:*** Ecological framework ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Robert Wood Johnson Foundation, Active Living Research ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. In Tampa, parks in neighborhoods with large concentrations of Hispanic Americans showed the highest mean energy expenditure per person (mean=0.069), followed by parks in predominantly white areas (mean=0.068) and parks in predominantly African-American areas (mean=0.067) (F=3.06, p=0.047). 2. In Chicago, users of parks in neighborhoods identified as African American showed the highest energy expenditure (mean=0.087), followed by parks in Hispanic (mean=0.082), and white (mean=0.082) neighborhoods (F=6.75, p=0.001). 3. In Tampa parks, differences in energy expenditure in parks of different racial/ethnic and income composition were statistically significant (F=8.96, p<0.001); energy expenditure was greatest in high-income Hispanic (mean=0.070) and low-income white neighborhood parks (mean=0.072) and lowest in high-income white (mean=0.066) and low-income Hispanic neighborhood parks (mean=0.066) (p<0.05 for difference between greatest and least energy expenditure) 4. In Chicago, energy expenditure in parks of different racial/ ethnic and income composition was statistically significant (F=10.16, p<0.001) with parks in neighborhoods identified as high-income African-American with higher energy expenditure (mean=0.096) than all the remaining ethnic-income neighborhood types. 5. For Tampa parks, the greatest energy expenditure was associated with tennis/racquetball and basketball courts (mean expenditure=0.098 and p<0.05 for both). Dog play areas (mean=0.057), picnic shelters (mean=0.059), and fishing piers (mean=0.060) were associated with the lowest energy expenditure (p<0.05 for all). 6. For Chicago parks, mean energy expenditure per person on basketball courts (mean=0.088), playgrounds (mean=0.088), and soccer fields (mean=0.094) was significantly higher than that observed on baseball/softball fields (mean=0.074) (p<0.05 for all).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Zlot, Schmid (2005)) United States	Access to parkland acreage ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** Behavioral Risk Factor Surveillance System (n=206,992 individuals from 335 metropolitan statistical areas), Nationwide Personal Transportation Survey (n=409,025 individuals from 55 metropolitan statistical areas), and Trust for Public Land (n=55 cities) for 34 metropolitan areas ***PRIMARY OUTCOMES:*** Utilitarian and recreational walking and bicycling ***MEASURES:*** 1. 1996 and 1998 Behavioral Risk Factor Surveillance System [BRFSS] (recreational or leisure-time walking and bicycling in the past month) 2. Nationwide Personal Transportation Survey [NPTS] data from 1995 assessed utilitarian walking or bicycling for transportation the past week (reliable, valid) 3. Trust for Public Land [TPL] (parkland acreage owned by municipal, county, metropolitan, state, or federal agencies, as a percentage of the nation's 55 most populous cities) ***DATA COLLECTION:*** The researchers used datasets from three different sources; the BRFSS (valid and reliable), the NPTS (valid and reliable), and the TPL. Data was analyzed for the metropolitan statistical areas (or cities) that were common to all three datasets that were utilized. There were 34 metropolitan statistical areas or cities common to all three data sets. ***LIMITATIONS:*** The data sources used did not use the same units of analysis; time periods for data collection varied by source; potential confounders were not controlled; self-selection for residence was not considered; potential under-reporting because the BRFSS captures only those who report their two most frequent activities	General population ***ELIGIBILITY:*** Non-institutionalized civilians, at least 5 years old living in a household, were eligible for the NTPS. Non-institutionalized U.S. citizens at least 18 years of age were eligible for the BRFSS. For the present study, individuals that included walking or biking as their frequent activity were eligible for the study. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from the Oregon Department of Human Services and Centers for Disease Control and Prevention. (evaluation) ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Not reported ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. A significant correlation was found between utilitarian walking and bicycling and parkland acreage ($r=0.62$, $p<0.0001$). 2. No significant correlation was observed between recreational walking and bicycling and utilitarian walking and bicycling or between recreational walking and bicycling and parkland acreage.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Cohen, Ashwood (2006)1) Washington DC, Maryland, South Carolina	Access to parks ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Presence of streetlights and shaded areas 2. Distance from residence to parks *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 1556 sixth-grade girls in 6 middle schools ***PRIMARY OUTCOME:*** Moderate to vigorous physical activity ***MEASURES:*** 1. Accelerometer (non-school moderate to vigorous physical activity [moderate-to-vigorous physical activity; MVPA]) 2. Geographic Information Systems [ArcView GIS] (geo-coded participant address) 3. US Census Bureau's Topologically Integrated Geographic Encoding and Referencing/Line street centerline data [TIGER] (street network [connectivity and segment]) 4. Direct observations with checklist (presence or absence of amenities at the park [lighting, restroom, shaded areas, fountains, fencing, open spaces, playing fields, courts]) 5. 2000 US Census data (block-level demographic data within 1 mile of residence) 6. School database (percentage of participants receiving free or reduced lunches at school [socioeconomic status]) 7. Departments of Recreation and Parks and local maps (locate and identify parks within 1 mile of participant address) ***DATA COLLECTION:*** Baseline data collected for the Trial of Activity for Adolescent Girls [TAAG] were used for this study. Girls wore accelerometers for 6 consecutive days during the winter and spring of 2003. MVPA was calculated for the hours outside school time. A secondary analysis used half-minute counts and 2 different cut-points; MVPA equivalent to slow walking (2.5 mph) and activities that are at or above a brisk walk (3.5 mph). Data were analyzed by summing counts from 5am to midnight. Trained staff documented park facilities within one mile of each participant's house. In Tucson, a comprehensive database of local park facilities was used, and data was verified by visiting only 10% of the parks. Parks were classified using the National Recreation and Parks Association definitions. ***LIMITATIONS:*** The study did not account for neighborhood self-selection; study design did not connect girl's activity to a particular location; degree of importance was not established between features; there was no differentiation between travel to the park and activity at the park	11-13 year old Females White 45% Hispanic 22% Black 21% Asian 4% Native American/ mixed 8% (evaluation sample) 20% Black and 6% Hispanic, and 10% of households were below poverty level (neighborhood average; ½ mile radius) ***ELIGIBILITY:*** Eligible participants for TAAG could not be planning on transferring to another school. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** For the TAAG study researchers were from universities in each of the six study areas managed data collection. The study was coordinated by the University of North Carolina and the National Heart, Lung, and Blood Institute Program Office. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** National Institutes of Health; National Heart, Lung, and Blood Institute ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. For the average girl having 3.5 parks within a 1-mile radius of home, accounted for an additional 68 minutes of non-school 3.0 MET MVPA and an additional 36.5 minutes of non-school 4.6 MET MVPA per 6 days. 2. For every park, regardless of type, within a half mile radius from home there was an increase in non-school MVPA by 33 minutes for 3.0 METs (coefficient estimate=0.02, p<0.005) and 17.2 minutes for 4.6 METs (coefficient estimate=0.03, p=0.04) per 6 days. Each additional park past the half-mile increased non-school MVPA by 12 minutes for 3.0 Mets (coefficient estimate=0.01, p<0.009) and 6.7 minutes for 4.6 Mets (coefficient estimate=0.01, p=0.09) per 6 days. 3. For the linear model, having either a neighborhood or community park within a half-mile of home was associated with 45.5 more 3.0 MET minutes (coefficient estimate=0.03, p<0.05) and 24.2 more 4.6 MET minutes (coefficient estimate=0.04; p<0.05) per 6 days. In the half-mile to 1-mile distance, MVPA increased by 29.6, 3.0 MET minutes (coefficient estimate=0.02, p<0.05) and 18.6, 4.6 MET minutes (coefficient estimate=0.03; p<0.05) per 6 days. 4. Additional non-school MVPA minutes increased when girls had neighborhood/community parks (3.0 MET 42 min, p<0.05; 4.6 MET 22 min, p<0.05), mini-parks (3.0 MET 92 min, p<0.05; 4.6 MET 40 min; p<0.10), natural resource areas (3.0 MET 36 min, p<0.05), walking paths (3.0 MET 59 min, p<0.05; 4.6 MET 13 min; p<0.05), and running tracks (3.0 MET 208 min, p<0.05; 4.6 MET 82 min; p<0.05) within a half mile of their homes. 5. Playgrounds (39 min for 3.0 MET; 28 min for 4.6 MET, p<0.05 for both), shaded areas (20 min for 3.0 MET; 14 min for 4.6 MET, p<0.10 for both), drinking fountains (24 min for 3.0 MET, p<0.05; 14 min for 4.6 MET, p<0.10), streetlights (28 min for 3.0 MET; 18 min for 4.6 MET, p<0.05 for both), basketball courts (37 min for 3.0 MET, p<0.10; 30 min for 4.6 MET, p<0.05), multipurpose rooms (13 min for 3.0 MET and 4.6 MET, p<0.05 for both), park offices (14 min for 3.0 MET, p<0.10), an ice rink (28 min for 3.0 MET, p<0.10), a running track (208 min for 3.0 MET, p<0.05), a swimming area (32 min for 4.6 MET, p<0.05), and an amphitheater (16 min for 3.0 MET, p<0.10) were associated with increased MVPA. 6. Lawn games (-161 min for 3.0 MET, p<0.05; -55 min for 4.6 MET, p<0.10) and skateboard areas (-94 min for 3.0 MET; -48 min for 4.6 MET, p<0.05 for both) were negatively associated with increased MVPA. 7. Special use parks were negatively associated with both 3.0 MET and 4.6 MET MVPA (each p<0.05). (Note: Metabolic equivalent–weighted moderate-to vigorous physical activity [MET MVPA] was calculated for the hours outside of school time using two different cut points: activity levels ≥3.0 metabolic equivalents and ≥4.6 metabolic equivalents, the latter indicating activity at the intensity of a brisk walk or higher.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Roemmich, Epstein (2007) New York	Access to neighborhood parks and recreation areas ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Percentage of neighborhood park area 2. Neighborhood street connectivity *Complex:* Not reportedl	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 1818 United States adults of diverse ethnicity and income level ***PRIMARY OUTCOMES:*** Total physical activity (PA), moderate to vigorous physical activity (MVPA) and screen time ***MEASURES:*** 1. Height and weight (body mass index [BMI]) 2. Accelerometers (objective daily physical activity) 3. Geographic Information System [GIS] (geo-coded participant residence and measured neighborhood environmental characteristics [housing density, street connectivity, street width, percentage of park area, park area, etc.]) 4. Parent Questionnaire (family socio-economic status, child's ethnic composition) 5. Habit Book (start/end time of wear for accelerometer, duration of sedentary behaviors) ***DATA COLLECTION:*** This study was based on a cross-sectional analysis of the screening data from a longitudinal study. Four cohorts were recruited over a 2-year period. Two cohorts were completed during the spring season and two during the fall season. Children were instructed to wear the accelerometer for at least 4 of 6 days, including 4 hour on weekdays before or after school hours and at least 6 hours on weekends. Children recorded the time, each occasion they put the monitor on, and when it was taken off for the day. Each child recorded in the habit book for 6 days, dividing the day into half hour increments with the help of a parent. Researchers compared activity level reported in the book with accelerometry data to determine an accurate activity count. The neighborhood environment data was measured in 2004. The activity data were collected over a two year period between 2003 and 2005. ***LIMITATIONS:*** The lack of concurrent measures of where the activity occurred is problematic; data was self-reported; accelerometers cannot measure all types of activity	8-12 year olds (10.5±1.4) 9% Black; 2% Other; 89% White (evaluation sample) ***ELIGIBILITY:*** Eligible participants had a BMI < 90th percentile, had no physical conditions limiting mobility, were willing to attend an orientation session, lived in areas that could be geo-coded, and watched 15 or more hours of TV per week including VCR use and video game playing. Parental consent was obtained from the parents of all participants. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from the University at Buffalo ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** University at Buffalo Interdisciplinary Research and Creative Activities Fund ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. For boys, neighborhood street connectivity (coefficient=0.30), percentage park area (coefficient=0.34), and percentage park and recreation area (coefficient=0.32) were positively correlated to total physical activity (p≤0.05 for all). 2. For boys, street connectivity (0.34) was positively correlated with moderate-to-vigorous physical activity (p≤ 0.05). 3. When combining the boys and girls into a single group, total physical activity was correlated to street connectivity (r=0.25, p≤ 0.05) and percentage park area (r=0.22, p≤0.04). 4. Street connectivity was correlated with MVPA (r=0.26, p≤0.05). ***SCREEN TIME:*** 5. Percentage park area + recreation were inversely correlated with television watching in boys but not girls (p≤0.05). 6. Home environment, rather than neighborhood environment, variables were correlated with sedentary behaviors in that the number of televisions in the home was related to television watching time (r=0.31, p≤0.01) 7. The number of televisions in the home was positively correlated with the television watching time in girls but not in boys (p≤0.05).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Norman, Nutter (2006) California	Access to neighborhood parks and size of parks ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Land-use, residential density, and retail floor area ratio 2. Street network and intersection density *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 799 adolescents (11-15 years) recruited into a health promotion intervention trial from 45 primary care providers at 6 clinic sites in San Diego County ***PRIMARY OUTCOMES:*** Overweight/obesity, total physical activity (PA), and moderate to vigorous physical activity (MVPA) ***MEASURES:*** 1. Height and weight (body mass index [BMI]) 2. Accelerometers (physical activity) 3. Geographic information systems [GIS] (geocode participant address, street network including land-use mix, retail floor area ratio, intersection density, and buffers) 4. Walkability index (intersection and residential density, retail floor area ratio, land-use mix) 5. San Diego Association of Governments database files [SANDAG] (land cover data, location of parks and schools) 6. 2000 Census (density/number of residential units) ***DATA COLLECTION:*** Over a 13-month period researchers recruited and collected information on households. Physical activity was measured for 7 days in 1-minute intervals. Age-specific cut-points were used to estimate intensity levels of activity. Intensity scores were summed and average across the valid days. Each measure was taken twice and the averages of the 2 readings were used. GIS variables were calculated for the 1-mile network buffer around each participant's residence using SANDAG and other data (SanGIS and DataQuick). The walkability index was derived by taking the sum of the z-scores for all 4 community design variables. Adolescents received $10 for completing all measurements and were entered in to a lottery drawing for one of 10 cash prizes ranging between $10 and $50. ***LIMITATIONS:*** Overall physical activity measures may have obscured associations between specific subsets of variables; accelerometers may underestimate common adolescent activities; measures of access to facilities assessed only proximity; many hypothesized built environment correlates were not measured in the present study; generalizability is limited to communities similar to those found in San Diego County (predominantly suburban with low walkability and few areas with high land use mix); for many of the participants geocoding for their address was not possible	Suburban 11-18 year olds 3.6% Asian/ Pacific Islander 6.4% African American 0.8% Native American 13.1% Hispanic 56.8% White 19.3% Other (evaluation sample) ***ELIGIBILITY:*** Adolescents were ineligible they were unable to read English at a minimum of 6th-grade reading level, any disability that would make exercise or nutrition counseling contraindicated. Verbal consent and child assent was obtained from each participant and parent. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from San Diego University and the University of California-San Diego. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** The National Cancer Institute; the National Heart, Lung, and Blood Institute; and The Active Living Research program of The Robert Wood Johnson Foundation ***STRATEGIES:*** Not applicable	***OVERWEIGHT/OBESITY:*** 1. No statistically significant correlations were found between environmental variables and BMI percentile for girls or boys. 2. BMI percentile was marginally correlated with number of recreation facilities for boys (r=0.08, p<0.11). ***PHYSICAL ACTIVITY:*** 3. For girls, significant correlations were found for total minutes/day of moderate-to-vigorous physical activity with number of recreation facilities (r=0.11, p<0.05), number of parks (r=0.14, p<0.01), and intersection density (r=-0.14, p<0.01). The number of recreation facilities (adjusted R^2=0.25, beta=0.11, p=0.016) and intersection density (R^2=0.25, beta=-0.127, p=0.006) remained significant for moderate-to-vigorous physical activity minutes per day after multiple linear regression, but the number of parks became non-significant. 4. For boys, total minutes/day of physical activity was correlated only with retail floor area ratio (r=0.12, p<0.05). Retail floor area ratio remained a significant contributor after multiple linear regression (R^2=0.23, beta=0.135, p=0.007).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Shores, West (2008) Eastern United States	Presence, absence, and use of park equipment and features (courts, paths, etc.) ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 2113 park visitors observed at 4 parks (a neighborhood park, an extreme park, a waterfront park, and a city park) ***PRIMARY OUTCOMES:*** Moderate and vigorous physical activity and sedentary behavior ***MEASURES:*** 1. System for Observing Play and Recreation in Communities [SOPARC] (number of park visitors, observable visitor characteristics [gender, age category, race/ethnicity], mode of participation, built park environment [BPA] features [courts, green space, paths, playground, sports fields, shelter/picnic areas], open spaces) 2. Bedimo-Rung Assessment Tool-Direct Observation [BRAT-DO] (equipment use, quantity and quality of BPA [e.g., court, green space, path]) ***DATA COLLECTION:*** Data was collected during the summer of 2006 by trained researchers. SOPARC was used to record park visitor outcomes; construct validity has been previously established. Before collecting data, inter-coder reliability was determined following the RAND PARKS study protocol by using a series of 20 coding sessions. Inter-observer agreements and intra-class correlations were above acceptable criteria for reliable assessment (required IOA= 80%, R=0.75, observed IOA=92%, R=0.97). Each park had target areas where environmental components were inventoried, measured, mapped, and described. Systematic scans were made 4 times throughout the day (morning 7:30-8:30am, lunch 12:00-1:00pm, afternoon 3:30-4:30pm, and evening 6:30-7:30pm) for 7 days, with two observations being recorded. Visual identification and evaluation were conducted using the BRAT-DO audit instrument. Built park environment (BPAs) or permanent changes made to the park environment were assessed. Each activity was categorized by intensity and average MET values for park visitors were calculated. ***LIMITATIONS:*** Observations were done in the summer months and does not account for other seasons; only 4 parks within a mid-sized community in the eastern United States; SOPARC is strictly observational which restricts information on use and affect and it cannot accurately measure watts, caloric energy expenditure, and change in heart rate	General population, 50% Whites, 38% African Americans, 11% Hispanic, 52% Adults, 29% Children, 15% Teens, 5% Older adults (evaluation sample) The proportion of racial and ethnic minorities observed was slightly higher than the local population. ***ELIGIBILITY:*** Not reported ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from East Carolina University and Appalachian State University. ***THEORY/ FRAMEWORK:*** Social ecological perspective ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Not reported ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Boys achieved moderate activity levels through participation in baseball and doubles tennis; girls achieved the same levels through tennis or walking (no statistics provided). 2. When teens participated in moderately active pursuits, they were most often playing doubles tennis (men and women) or walking (women) (no statistics provided). 3. When adults were observed participating in more intense activities, it was often alongside their children; women, in particular, were most likely to be vigorously active with children (no statistics provided). 4. Older individuals were most frequently seen participating in sedentary activities (no statistics provided). 5. There were significant differences in activity intensity according to target area (X^2=28.71, p<0.01). Park visitors in target areas with playgrounds (81.21% vigorous intensity) and courts (72.14% vigorous intensity) were most active of all visitors, whereas visitors in sheltered target areas were least active (90.11% sedentary). 6. Park visitors were most often sedentary when observed in open green spaces (72.08%) and in shelter/picnic areas (90.11%) 7. Moderate-intensity physical activity was observed in the highest proportion among visitors on sports fields (51.66%) and using paths (38.20%). 8. Use of playgrounds (B=1.510, β=0.701, p<0.01), courts (B=1.140, β=0.524, p<0.01), and paths (B=0.768, β=0.114, p<0.05) was positively related to physical activity intensity. While use of shelters was significantly negatively related to physical activity intensity (B=-0.578, β=-0.37, p<0.01).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Mowen, Confer (2003) Ohio	Perceptions and intentions of use for a newly constructed brownfield park in-fill ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Distance to park from residence *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 505 visitors to the Ohio and Erie Canal Reservation, a new park in-fill ***PRIMARY OUTCOME:*** Intention to visit the park ***MEASURES:*** 1. Questionnaire (short term and long term behavioral intentions related to the park [use and adoption], participant address, age, gender, income level, education level, and race) 2. Geographical Information System [GIS] data (straight line distance to new urban park in-fill from respondents address) ***DATA COLLECTION:*** The park assessed was a 283 acre in-fill, built on a former brownfield and was opened as a public park and conservation area in August, 1999. Visitors were contacted during the Fall of 1999 and the Spring and Summer of 2000. Data was collected via a mail survey utilizing a modified Dillman (postcard) reminder procedure in combination with an initial personal contact. A questionnaire was distributed to park visitors who came to this park during its first year of operation. Items representing Rogers' five innovation characteristics were developed to assess use and adoption of the park. ***LIMITATIONS:*** Causal inferences cannot be made using cross sectional data; questionnaire data is self-reported	General population 4% Minority 2% African American 2% Other (evaluation sample) ***ELIGIBILITY:*** Not reported ***EXPOSURE/ PARTICIPATION:*** All individuals with access to the new park in-fill	***LEAD AGENCY:*** Researchers were from Pennsylvania State University and the University of Florida. ***THEORY/ FRAMEWORK:*** Theory of Innovation Diffusion provides a framework from which to understand how citizen perceptions can foster the acceptance and use of urban in-fill parks. ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Not reported ***STRATEGIES:*** Not applicable	***STAGES OF CHANGE:*** 1. The less individuals perceived the park as compatible with surrounding communities, the more likely respondents intended to re-visit in the future (compatibility; beta= -0.211, p=0.014). 2. The shorter the distance between the park and nearby neighborhoods, the more likely early adopters were to indicate regular visitation intentions (beta= -0.208, p=0.002). 3. None of the demographic characteristics included in the model were significant predictors of future visitation at this urban park infill. 4. The more the park in-fill was perceived as accessible, convenient, and superior to other traditional neighborhood parks, the more likely visitors intended on visiting regularly (accessibility; beta=0.205, p=0.002, convenience; beta=0.206, p=0.009, superiority; beta=0.145, p=0.038,).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Cohen, McKenzie (2007) California	Access to public parks and park characteristics ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of park safety 2. Distance from residence to parks *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 1318 adults including 713 park users and 605 neighborhood residents living within 2 miles of 8 Los Angeles parks (4 designated to receive significant improvements, 4 not to be improved within the next few years). ***PRIMARY OUTCOMES:*** Physical activity (PA), total energy expended (METs), and park use ***MEASURES:*** 1. System for Observing Play and Recreation in Communities [SOPARC] (physical activity in the park, presence of natural light [after dark], usability/accessibility of the park, availability of supervision or equipment, presence of organized activities) 2. Interviews with park users and area residents (frequency of park visits and exercise, perceptions of park safety, proximity to park, park characteristics, and performance of park staff) ***DATA COLLECTION:*** The Multi-Cultural Area Health Education Center and the Los Angeles City Department of Recreation and Parks assisted with questionnaire development and data collection. Observations of the parks were completed between December 2003 and May 2004. Observations were conducted by two observers in all target areas during four 1-hour time periods. The authors conducted face-to-face interviews in either English or Spanish with both park users and neighborhood residents. Park survey participants were selected from the busiest and least-busy target areas, and half in each target area were selected because they were sedentary and half because they were active. ***LIMITATIONS:*** Observations and interviews were completed for only 56 days, and these days may not be representative of total park use and physical activity, and may not capture secular variations; cross-sectional design limits ability to determine causality; survey data was self-reported	Adults On average, the neighborhoods surrounding the parks were 63.5% Latino, 31.0% African American. 1.8% White and 30.4% lower income ***ELIGIBILITY:*** Only respondents aged 18 years of age or older were eligible to complete the interviews. ***EXPOSURE/ PARTICIPATION:*** Residents within 2 miles of the park and all park users for the 8 Los Angeles parks. An average of 159,125 individuals live within the 2-mile radius.	***LEAD AGENCY:*** The research team was from the RAND Corporation and San Diego State University. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** National Institute of Environmental Health Services ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Younger age, being male, and living within 1 mile of a park were positively associated with the frequency of leisure exercise (incident rate ratio= 1.38, 95%CI=1.04-1.84, p<0.001) and park use (incident rate ratio=4.21, 95%CI=2.54-7.00, p<0.001). 2. More residents living within 0.5 miles of the park reported leisurely exercising 5 or more times per week more often than those living more than 1 mile away (49% vs. 35%, p<0.01). 3. People who lived within 1 mile of the park were 4 times as likely to visit the park once a week or more and had an average of 38% more exercise sessions per week than those living further away. 4. On average, more people were present during supervised activities (e.g., sports competitions) than unstructured activities (49 vs. 6 people; p<0.006). The correlation between the percent of areas being supervised and the total energy expended (METs) estimated for each park was 0.74 (p<0.04). ***PARK USE:*** 5. Among observed park users, 43% lived within 0.25 mile, and another 21% lived between 0.25 and 0.5 mile of the park (p<0.001). Only 13% of park users lived more than 1 mile from the park. 6. Of local residents, 38% living more than 1 mile away were infrequent park visitors, compared with 19% of those living less than 0.5 mile away (p<0.001). 7. Nearly all respondents (98%) living near the 2 parks with the lowest percentage of households in poverty indicated that they felt the parks were safe, compared with between 50% and 74% for parks in neighborhoods with over 40% of households in poverty. 8. Concerns about park safety were not associated with either park use or frequency of exercise.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Babey, Hastert (2008) California	Distance and access to open spaces and parks ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of safe parks *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 4010 adolescents (aged 12-17 years) who responded to the 2003 California Health Interview Survey ***PRIMARY OUTCOME:*** Physical activity (PA) ***MEASURES:*** 1. California Health Interview Survey data (self-reported walking distance to park or open space from home, housing type, neighborhood safety, family income, age, gender, and race/ethnicity) 2. Urbanicity (population density of adolescent's zip code) ***DATA COLLECTION:*** Data were from the 2003 California Health Interview survey. This analysis was conducted from 2005-2006. Regular physical activity was defined as completing at least 20 minutes of vigorous activity on 3 or more of the last 7 days, or at least 30 minutes of moderate activity on 5 or more of the last 7 days. Physical inactivity was defined as less than 20 minutes of vigorous activity or 30 minutes of moderate activity in the last 7 days. Housing type, neighborhood safety and family income were reported by the adult respondent. ***LIMITATIONS:*** Data was self-reported; physically active adolescents were not asked where parks were located	12-17 year olds ***ELIGIBILITY:*** Not reported ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team from the Center for Health Policy Research and the Department of Health Services, School of Public Health, University of California at Los Angeles. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Robert Wood Johnson Foundation and The California Endowment ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Stratified analyses revealed that access to a safe park was positively associated with regular activity (relative risk [RR]= 1.10, 95% CI= 1.01-1.17, p<0.05) and negatively associated with inactivity (RR=0.58, 95% CI= 0.39-0.86, p<0.01) for adolescents in urban areas, but not rural areas. 2. In stratified analyses, adolescents with access to a safe park were less likely to be inactive than those without access for example; (1) adolescents living in apartments (RR= 0.52, 95% CI= 0.28-0.96, p<0.05) but not houses, (2) adolescents living in neighborhoods perceived as unsafe (RR= 0.47, 95% CI= 0.23-0.93, p<0.05) but not those living in safe neighborhoods, and (3) adolescents from lower-income (RR= 0.62, 95% CI=0.39-0.97, p<0.05) but not higher income families. However, access to a safe park was not significantly associated with regular activity for these groups. 3. Access to a safe park was not associated with regular activity for Latino, Asian, African-American, or White adolescents. However, access to a safe park was associated with physical inactivity among Asian and White adolescents. Asian and White adolescents with access to a safe park were less likely to be inactive than those without access (RR= 0.38, 95% CI= 0.14-0.97, p<0.05; and RR= 0.57, 95% CI= 0.31-0.99, p<0.05, respectively).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Gomez, Johnson (2004) Texas	Access to recreational facilities ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of neighborhood safety from crime 2. Distance to nearest open play areas from individual residence *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:***177 students in 7th grade from 4 middle schools and 1 private school in a San Antonio neighborhood ***PRIMARY OUTCOME:*** Outdoor physical activity ***MEASURES:*** 1. Recall questionnaire (physical activity [activities done more than 10 times in past 12 months not including those done in physical education class, months in which activities were performed, number of days each activity was performed, outdoor activities outside of school], demographic information, participant address, perceived barriers to physical activity, perceived neighborhood safety) 2. San Antonio Newspaper Police blotters (crimes [e.g., robbery]) to which the San Antonio Police Department [SAPD] responded during the previous 24 hours, crime street address or block number, count for violent crimes) 3. Maps (crime densities) 4. Drafting compass (distance on the map from residence to an open play area [any area readily accessible for use by the public]) 5. Censtats Information Census (census tract level; estimate of per capita income) ***DATA COLLECTION:*** Data for the present study came from the Project Physical Activity Changes in Teenagers [PACT] study. Participants completed questionnaires during school hours in small groups of 10-15. A second investigator was present to give individual help in completing the questionnaire. Both Spanish and English language versions of the physical activity questionnaire were available. Participants, whose primary language was Spanish, were administered the survey separately. Both the newspaper and the SAPD verified the completeness of the information contained in the police blotters. The recall questionnaire was previously developed and validated for adolescents for measures for physical activity. ***LIMITATIONS:*** Small sample of 7th graders; small sample of boys; lack of information on sports participation; lack of information on other environmental factors	Urban, Hispanic, 11-13 year olds (target) 94% Mexican-Americans, 2% non-Hispanic Whites, 3% African-Americans, and 1% Other ethnicity; 97.7% minority; Annual income ranged from $3927 to $15,887 (evaluation sample) The barrio is inhabited primarily by Mexican-Americans and is characterized by low-income household and high crime rates. The racial/ethnic composition of the study sample closely matched that of the school district to which the study schools, except the private school, belong, with 91% of the students in the district being Mexican-American ***ELIGIBILITY:*** A written consent form was signed by a parent or guardian. All 7th graders attending one of four middle schools and one private school in the barrio were asked to participate in Project PACT. ***EXPOSURE/ PARTICIPATION:*** Sample size for this study only comprised 33% of the students from the 5 schools. Approximately 536 students from the 5 schools are exposed to the same environmental conditions.	***LEAD AGENCY:*** The research team was from the University of Texas at San Antonio, the Medical College of Wisconsin, and San Diego State University. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Generalist Physician Faculty Scholar Award from the Robert Wood Johnson Foundation ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Stepwise multiple regression analysis for the entire group revealed none of the environmental factors were significantly associated with outdoor physical activity (OPA). 2. As distance to the nearest open play area increased, OPA for boys decreased significantly (β=-0.317, T= -2.823, p=0.006). 3. For girls, as violent crime within 1/2 mile of home increased, OPA significantly decreased (β= -0.34,T= -0.3.568, p<0.001) (accounted for 9.4% of variances in girls' OPA). While the perception of feeling safe in the neighborhood increased, OPA also increased significantly (β=0.223, T=2.343, p=0.021). ***OTHER RESULTS:*** 4. Post hoc analysis showed no significant correlation between objectively measured violent crimes/ year within 1/2 mile radius of participants' homes and participants' subjective assessments that the safety of the neighborhood was a barrier to physical activity.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Romero, Robinson (2001) California	Access to parks ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of neighborhood safety from crime 2. Distance to nearest open play areas from individual residence *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 796 students from 8 elementary schools ***PRIMARY OUTCOMES:*** Overweight/obesity and physical activity (PA) ***MEASURES:*** 1. Height and weight (body mass index [BMI]) 2. 20-m shuttle run test (physical fitness) 3. Child Questionnaires (sex, date of birth) 4. Modified Self-administered Physical Activity Checklist [SAPAC] (duration of child participation in common activities after school) 5. Adapted Hazards Scale (neighborhood perceptions of: traffic, trash and litter; crime, drugs, and gangs; too much noise; lack of access to parks; and prejudice) 6. Adapted subscale of the Bidimensional Acculturation Scale for Hispanics (language preference, categorization [traditional, marginalized, assimilated, and bicultural]) 7. School district data (pan-ethnic labels for all children) 8. Parent interviews (sex, specific ethnic label, education, socioeconomic status [SES; occupation]) 9. Hollingshead categories (parents' occupations) ***DATA COLLECTION:*** Students were assigned a special identification number that was used for tracking rather than using individual name. Surveys were prepared in English and Spanish or English and Vietnamese. All physical measures of participating children were obtained at stations set up in the classroom or at a nearby outdoor area. All parent and child assessments were completed within the same 2-month period. Parent occupation was coded into the Hollingshead categories and then dichotomized into lower and higher SES levels using the midpoint of the scale. Child neighborhood perceptions were assessed using a 3-point Likert-type scale; 1 was equivalent to not being problematic and 3 was related to large problems. Child activity during the previous day was rated as none and less or more than 10 minutes; agreement for this scale had been tested at 86% using direct observation to test. Child acculturation was based on language preference when at home, with friends, and watching television. In this sample, the internal consistency of the Adapted Hazards scale was $\alpha = 0.76$. ***LIMITATIONS:*** Degree of perceptions for hazards as a barrier were not assessed; causal inferences cannot be assessed using a cross-sectional study design; not all neighborhood barriers were examined; cost and quality of available locations for physical activity or organized sports were not assessed; parents' perceptions and how they influence child activity need to be assessed; the SAPAC may be problematic for many assessment situations; survey data was self-reported; it is possible that a demand bias exists; generalizability of this study is unclear	5-10 year olds, Mean=9 [±0.37] years, 50% male, 49.9% Latino, 32.9% Asian, 8.1% Pacific Islander/ Filipino, 5.5% European American, and 3.6% African American, 59% lower socioeconomic status (evaluation sample) Differences between the sexes were found for the measure of physical fitness (t234= -4.18, p<0.001); boys ran more laps than girls (mean =17.61±11.2 laps and 14.66±7.58 laps, respectively). Children of lower SES reported more neighborhood hazards (mean=13.51±3.83) than children of higher SES (mean=12.73±3.48). School differences were found for ethnicity (X^2=85.84; p<0.001), SES level (X2=46.35; p<0.001), and BMI (F=2.58; R^2=0.02; p=0.01). ***ELIGIBILITY:*** All fourth-grade students (N=845) enrolled in 8 northern California elementary schools were eligible to participate in the study. A passive-consent procedure was used. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from the Mexican American Studies and Research Center, University of Arizona, Stanford Center for Research in Disease Prevention, Stanford University and the University of New Mexico. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Pretesting allowed researchers to modify the SAPAC to include only after-school activities, add more common activities, and simplify the response process. ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Funding was provided by a grant from the National Cancer Institute. ***STRATEGIES:*** Not applicable	***OVERWEIGHT/OBESITY:*** 1. Higher BMI was associated with the perception of fewer neighborhood hazards for children of lower SES (r=-0.13, p<0.05); this correlation was significant but low. ***PHYSICAL ACTIVITY:*** 2. Contrary to the hypothesis, the perception of more neighborhood hazards was positively correlated with more reported physical activity (r=0.13, p<0.001) 3. Although increased self-reported physical activity was associated with increased BMI (r=0.09, p<0.05), BMI was significantly negatively associated with physical fitness (r=-0.36, p<0.001); as BMI increased, physical fitness decreased. 4. For both SES levels, as physical fitness increased, BMI decreased, as expected (low SES r=-0.36, p<0.001; high SES r=-0.36, p<0.001) 5. For children of higher SES, the perception of more neighborhood hazards was associated with more reported physical activity [r=0.18, p<0.05].

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Suminski, Poston (2005) Midwestern United States	Access to neighborhood parks ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of neighborhood safety from crime 2. Access to shops and other neighborhood destinations within walking distance 3. Perceptions of neighborhood traffic safety 4. Neighborhood aesthetics and the integrity of streets and sidewalks *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 474 participants from a large, Midwestern metropolitan area ***PRIMARY OUTCOME:*** Walking behavior (transportation, exercise, and dog walking) ***MEASURES:*** 1. Questionnaire (frequency and duration of walking behavior, forms of physical activity, physical environment [construction/integrity of sidewalks and streets, neighborhood traffic volume and speed, lighting, crime, aesthetics, availability of shops, parks, work, and schools], demographic data, dog ownership) 2. County Auditor Records (list of participants and locations) ***DATA COLLECTION:*** Door-to-door interviews were conducted by trained interviewers in 2003 over a 13-day period in July. An analysis was conducted in 2004. Men and women were analyzed separately. For the interview, intra-class correlations for the physical environment questionnaire ranged from 0.85 to 0.94, and the Cronbach's alpha coefficient of internal consistency was 0.83. The scores from each of the items were summed and divided by the number of items per feature to yield an average score. The average feature scores were transformed into categorical variables with three levels - the lowest, middle, and highest tertiles. The questionnaire used was reliable (correlation coefficient r=0.58) and valid (relationship with physical activity log; correlation coefficient r=0.71) for assessing walking behavior and other forms of physical activity. ***LIMITATIONS:*** Questionnaire data was self-reported; environment data was based on perception rather than objective measures; cross-sectional study design does not allow for causal inferences to be made	Adults 89.7% White 1.7% Hispanic 1.5% African American 1.3% Asian American (evaluation sample) ***ELIGIBILITY:*** Eligible participants resided in the interview neighborhood, were 18 years of age and older, and were not physically limited because of a health condition. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from Ohio State University, University of Missouri-Kansas City, and the Mid-America Heart Institute ***THEORY/ FRAMEWORK:*** Social ecologic models ***EVIDENCE-BASED:*** Findings from cross-sectional and longitudinal investigations suggest that features of the physical environment are related to walking (multiple references). ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Funding for this study was provided by the Centers for Disease Control and Prevention. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Women were 5.7 times more likely to walk for transportation if they indicated having an average number of available places in and around their neighborhood to which they could walk (95%CI=1.63-19.73; p<0.01). 2. Women were 4.5 times more likely to walk for exercise in their neighborhood if neighborhood safety was average compared to below average (95%CI=1.01-20.72; p<0.05). 3. Women were more likely (threefold) to walk their dog if neighborhood safety was average versus below average (95% CI=1.01-11.08; p<0.05). 4. For men, environmental features were not associated with walking the dog or for exercise. However, inverse relationships between walking for transportation and environmental features were noted in men. 5. Men were less likely to walk for transportation in the neighborhood if the functional (OR=0.22, 95%CI=0.06-0.89) or aesthetic (OR=0.17, 95%CI=0.03-0.89) features of the neighborhood were average versus below average (p<0.05). 6. Women with an average number of neighborhood destinations were more likely to walk for transportation in the neighborhood (OR=5.7, 95%CI=1.63-19.73) than women with a below average number of neighborhood destinations (p<0.01).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Parks (Including open play areas, green spaces, and beaches)-International						
Potwarka, Kaczynski (2008) Canada	Proximity to parks and availability of park facilities in neighborhood ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Access to parks and playgrounds *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 108 (55 aged 2-9; 53 aged 10-17) children in a mid-sized city in Ontario, Canada ***PRIMARY OUTCOME:*** Overweight/obesity ***MEASURES:*** 1. Height and weight (body mass index [BMI]) 2. Geographic information systems [GIS] mapping of municipal data sets (number [within 1-kilometer radius] and size of parks, distance between home and parks [ICC=0.98 with Cartesian mapping]) 3. Municipality database (park size) 4. Environmental Assessment for Public Recreation Spaces [EAPRS] (absence or presence of paved trails, unpaved trails, paths, open spaces, playgrounds, meadows, wooded areas, water areas, soccer pitches, ball diamonds, tennis courts, basketball courts, and swimming pools) ***DATA COLLECTION:*** The present study used data from previous research conducted in August of 2006. All parks were visited by a trained observer who used the EAPRS instrument (ICC=0.88). ***LIMITATIONS:*** There was a lack of variability in the predictor variable and it was excluded from analyses; parents reported child's height and weight; parks closest to children's residences may not be the parks that children visit	2-17 year old; mean age was 9.6 ± 5.1 years 55.6% Male 68.5% healthy weight, 31.5% at risk/overweight (evaluation sample) ***ELIGIBILITY:*** Not reported ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team from the University of Waterloo ***THEORY/ FRAMEWORK:*** Ecological model ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Not reported ***STRATEGIES:*** Not applicable	***OVERWEIGHT/OBESITY:*** 1. Compared to at-risk or overweight children, none of the 3 park variables (distance to the closest park, number of parks within 1 kilometer, or amount of park area within 1 km) was associated with significantly increased odds of being classified in the healthy weight category for either the entire sample or either of the 2 sub-age groups. 2. Of the 13 park facilities examined, only one variable was a significant predictor of a child's weight category. Children with a park playground within 1 km of their home were almost 5 times more likely to be classified as being of a healthy weight than those children without playgrounds in nearby parks (OR=4.92; 95% CI=1.36, 9.71). No significant associations were found for the other park facilities or when the 2 age sub-samples were examined. 3. No significant associations were found for the other park facilities or when the two age sub-samples were examined. [No p-values provided]

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Timperio, Giles-Corti (2008) Australia	Access to and features associated with public open spaces near the home ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of safety from unguarded dogs 2. Neighborhood aesthetics *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 497 students (163 approximately 9 years, 334 approximately 14 years) from 19 elementary schools in high and low socioeconomic areas of metropolitan Melbourne, Australia ***PRIMARY OUTCOME:*** Moderate to vigorous physical activity ***MEASURES:*** 1. Parent questionnaire 2. Accelerometers (child's physical activity levels) 3. Public open space audit (features of public open spaces for physical activity [excluding golf courses and educational institutions]) 4. Geographic Information System [GIS] (geo-code of participant address, closest free public open space to the residence) ***DATA COLLECTION:*** The study drew on data collected in 2004 for the first follow-up of the Children Living in Active Neighborhoods [CLAN] study. Each child wore an accelerometer for 1 week. Total duration (minutes) of moderate-to-vigorous physical activity was calculated for each weekend day and after-school hour during the week. Geographic Information System was used to calculate open spaces along the road network using information gathered from the Open Space 2002 spatial dataset (provided by the Australian Research Centre for Urban Ecology). Trained auditors visited each public open space in 2004 and 2005 (k=0.65, ICC>80% for all items). ***LIMITATIONS:*** Small sample size; the 'closest' public open space may not have included public open space visited by participants; the study did not consider accessibility to closest open public space; physical activity performed in the open space was not considered.	5-18 year olds ***ELIGIBILITY:*** Participants were eligible if they had participated in the CLAN study, had complete accelerometry measures, and gave a valid residence that was able to be geo-coded. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from the Deakin University and the University of Western Australia. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** National Health and Medical Research Council ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. There were no associations between any features of the child's closest public open space and younger boys' moderate-to-vigorous physical activity after school. 2. The presence of playgrounds was positively associated with younger boys' weekend moderate-to-vigorous physical activity (B=24.9 min/day; p<0.05), and lighting along paths was inversely associated with weekend moderate-to-vigorous physical activity (B= -54.9 min/day, p<0.05). 3. The number of recreational facilities was inversely associated with younger girls' moderate-to-vigorous physical activity after school (B= -2.6 min/day, p<0.05) and on the weekend (B= -8.7 min/day, p<0.05). 4. There were no associations between any features of the closest public open space and adolescent boys' moderate-to-vigorous physical activity after school. 5. Adolescent girls had more moderate-to-vigorous physical activity after school if their closest public open space had trees that provided shade (B= 5.8 min/day, p<0.01) and had signage regarding dogs (B=6.8 min/day, p<0.05), compared with other girls. 6. There were no significant associations between public open space features and adolescents boys' or girls' moderate-to-vigorous physical activity on the weekend.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Witten, Hiscock (2008) New Zealand	Access and distance to public open spaces ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 12,529 participants living in 1,178 neighborhoods in New Zealand ***PRIMARY OUTCOMES:*** Overweight/obesity, physical activity and sedentary behavior ***MEASURES:*** 1. 2002 and 2003 New Zealand Health Survey [NZHS] (height, weight [body mass index], intensity of physical activity, sociodemographic data) 2. Geographic Information Systems [GIS] (large surface areas converted to represent multiple access points 100 m apart, travel time access from mesh-block centroid to access point, road network, and network functionality [road surface, topography, speed limits, etc]) 3. New Zealand Census data (neighborhood defined as mesh-block [smallest unit of dissemination] each representing about 100 people) 4. 2002 and 2003 New Zealand Health Survey [N 5. 2001 Urban Area Classification (mesh-block classification; 5-level urban/rural classification) 6. Land Information New Zealand [LINZ] and Department of Conservation files (location and number of public spaces) ***DATA COLLECTION:*** Data for the present study used 2002 and 2003 New Zealand Health Survey data. GIS conversions led to 46,274 access points for parks and 13,313 for beaches. Neighborhood travel time was divided into quartiles before being linked to respondents. The physical activity measure was dichotomized to sedentary/non-sedentary behaviors and meeting recommended levels of exercise or not. Sedentary was less than 30 minutes of activity in the past week and recommended activity was at least 2.5 hours of physical activity on five or more days over one week. ***LIMITATIONS:*** Data was self-reported	15 years and older ***ELIGIBILITY:*** Individuals 15 years or older were eligible for the NZHS. ***EXPOSURE/ PARTICIPATION:*** NZHS had a 72% response rate of the 2.6 million target population.	***LEAD AGENCY:*** Researchers were from Massey University, the University of Canterbury, and the University of Otago (evaluation). ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** The New Zealand Health Research Council ***STRATEGIES:*** Not applicable	***OVERWEIGHT/OBESITY:*** 1. With regard to parks there was little difference in BMI across the access quartiles. 2. Respondents living in neighborhoods with best access to the beach had lower BMI (B=0.13, 95% CI=0.07-0.18). ***PHYSICAL ACTIVITY:*** 3. Neighborhood access to parks was not associated with BMI, sedentary behavior or physical activity, after controlling for individual-level socio-economic variables, and neighborhood-level deprivation and urban/rural status.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Wendel-Vos, Schuit (2004) Netherlands	Neighborhood availability of parks and recreational spaces ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Access to green space and vegetation *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 11541 residents in and around Maastricht, The Netherlands ***PRIMARY OUTCOMES:*** Walking and cycling ***MEASURES:*** 1. Height and weight (body mass index [BMI]) 2. Questionnaire (demographic factors, perceived health status) 3. Short Questionnaire to Assess Health Enhancing Physical Activity [SQUASH] (frequency, duration, and intensity of 4 domains of physical activity [commuting activities, occupational physical activity, household activity, and leisure-time physical activity]) 4. Geographic Information Systems [GIS] databases of Statistics Netherlands (land utilization, amount of green and recreational space [e.g., woods, parks, sport grounds, allotments for growing vegetables]) 5. Municipal Health Service examination (physical health assessment) ***DATA COLLECTION:*** Data for the present study was taken from 2 National Institute for Public Health and the Environment monitoring studies conducted from 1987-1992 and 1993-1997. GIS databases were coded at the level of postal codes. Two neighborhoods around the six postal codes were defined; one with a radius of 300 meters and one with a radius of 500 meters. For every neighborhood, the square meters of woods, parks, sport grounds, allotments, and day-trip grounds within the 300-and 500-meter radius neighborhoods were calculated using GIS. Every individual was linked to a neighborhood through his/her postal code and every postal code was linked to an amount of square meters of green or recreational space. In a previous study, the SQUASH was validated with a CSA activity monitor and achieved a correlation coefficient for validity of 0.45(95% CI=0.17-0.66) and a reproducibility of 0.44-0.96. ***LIMITATIONS:*** GIS databases are not sufficient to fully describe the association under study; cross-sectional study design; use of self-report data; information in the GIS databases was probably aggregated to a higher level than necessary	General population 46% Men, 54% Women, 20-59 years old, mean age of 49 yrs (evaluation sample) ***ELIGIBILITY:*** All participants signed a consent form. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from the National Institute for Public Health and the Environment, the Netherlands; Wageningen University, the Netherlands; and Nutrition and Toxicology Research Institute at Maastricht University, the Netherlands. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Not reported ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. No associations were found for attributes of green and recreational space and walking. 2. In neighborhoods within a 300-m radius, inhabitants spent more time biking for leisure (β=0.04, 95%CI= 0.01-0.07, p<0.05) and commuting purposes (β=0.02, 95%CI= 0.01-0.04, p<0.05) where there was more square area of sports ground. 3. There was an association between square area of sports ground and total time spent biking and walking (β=0.06, 95%CI= 0.01-0.1, p<0.05). 4. The association between biking during leisure time and square area of sports grounds was not present in neighborhoods with a 500-m radius. 5. There was an association between biking for commuting purposes and the square area of parks in neighborhoods within a 300-m radius (β=0.02, 95%CI= 0.01-0.04, p<0.05).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Kaczynski, Potwarka (2009) Canada	Availability of parks, total size of parks, and presence and absence of amenities ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 384 participants (241 were female) ***PRIMARY OUTCOME:*** Moderate-strenuous physical activity ***MEASURES:*** 1. Geographic Information System [GIS] data (distance to park, participant address) 2. 7-day physical activity log booklet (duration, intensity, location, and other details of physical activity) (n=384 reported physical activity episodes; n=218 physical activity episodes in the park ***DATA COLLECTION:*** In August 2006 trained research assistants distributed study packages door-to-door to adults, which would be collected 10 days later. Based on GIS-produced municipal maps, the four study areas contained a total of 33 municipal parks. Another 19 parks within a buffer zone of 800 meters (m) around each neighborhood also were included in the analysis to account for participants' potential use of parks falling outside the relatively artificial boundaries of defined neighborhoods. According to the municipality's database, the 52 parks ranged in size from 0.10 to over 232 hectares (1 hectare equals just under 2.5 acres) and possessed various facilities, amenities, and terrain. Weekly minutes of moderate-to-strenuous physical activity was reported in 3 contexts (i.e., total, neighborhood-based, and park-based). Activity totals were calculated based on the weekly log booklets and were dichotomized as "no moderate to strenuous physical activity" and "150-minutes of moderate to strenuous physical activity (threshold of 150 from Healthy People 2010). Euclidean distance between each participant's home and each park was calculated and a tally of the number of parks within a 1 kilometer (km) radius was obtained. ***LIMITATIONS:*** Data was self-reported; cross sectional study design does not allow causal inferences to be made	Adults (18-88 years of age, mean age 45.8 ± 15.6 years) General Population, 62.8% Female (evaluation sample) ***ELIGIBILITY:*** Not reported ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from Kansas State University and the University of Waterloo. ***THEORY/ FRAMEWORK:*** Social ecologic model ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Not reported ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Each additional hectare (i.e., 2.47 acres) of park area within 1 km increased the odds of participating in 150 or more minutes of total moderate-strenuous physical activity by 2% (OR=1.02, 95% CI= 1.01-1.03, p<0.05) and each additional park increased the odds of participating in 150 or more minutes of neighborhood-based moderate-strenuous physical activity by 17% (OR=1.17, 95% CI= 1.01-1.34, p < 0.05). 2. Both the number and total area of parks within one 1 km were significant predictors of "park-based moderate-to-strenuous physical activity," with each additional park within 1 km of participants' homes increasing the odds of engaging in some park-based physical activity by 15% (OR= 1.15, 95% CI= 1.01-1.28, p<0.05). 3. Distance to the closest park did not play a significant role in predicting moderate-to-strenuous physical activity in any of the three contexts. 4. For neighborhood based activity, significant results were observed among females with each additional park and each additional hectare of park area within 1 km increasing their odds of engaging in 150 or minutes of moderate-to-strenuous physical activity by 19% and 2%, respectively (OR= 1.19, 95% CI= 1.03-1.36 and OR= 1.02, 95% CI= 1.01-1.03, respectively p<0.05 for both). 5. Among men, the odds of engaging in some amount of moderate-to-strenuous physical activity in parks increased 2% with each additional hectare of nearby parkland (OR= 1.02, 95% CI= 1.01-1.03, p<0.05). 6. Among women, each additional hectare was related to a 3% increase and each additional park to a 17% increase in engaging in at least some moderate-to strenuous park-based physical activity (OR= 1.03, 95% CI= 1.01-1.05, OR= 1.17, 95% CI= 1.02-1.31, respectively, p<0.05 for both). 7. Both the number and total area of parks within 1 km of participants' homes increased the odds of engaging in some park-based moderate-to-strenuous physical activity among both the 18–34 year olds (number; OR= 1.19, 95% CI= 1.03-1.33, and total; 1.03, 95% CI= 1.01-1.04, n=107) and the 55 and older (number OR= 1.16, 95% CI= 1.01-1.31, n=104 and total; OR= 1.04, 95% CI= 1.03-1.05 age group (p<0.05 for all). 8. No significant relationships between the 3 park variables and any physical activity measure were observed among adults 35-54 years (n=167).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Hume, Salmon (2005) Australia	Presence of parks and green spaces ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Access to diverse locations in the neighborhood 2. Access to food stores and restaurants *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 147 children from three Victorian Metropolitan government-funded coeducational primary schools of more than 500 students enrolled ***PRIMARY OUTCOME:*** Low, moderate, and vigorous intensity physical activity ***MEASURES:*** 1. Mapping through use of drawings (perceptions of importance in home and neighborhood [places and things]) 2. Photograph Mapping (perceptions of importance [places and things in the home and neighborhood environment]) 3. Accelerometers (duration of physical activity) 4. Qualitative Assessments (features drawn and photographed were analyzed for common themes, 6 themes identified [family home, opportunities for physical activity and sedentary pursuits; food items and locations; green space and outside areas; the school and opportunities for social interaction]) 5. 1998 SEIFA index from the Australian Bureau of Statistics (socioeconomic status and disadvantage) ***DATA COLLECTION:***The map drawing lessons were 1 week apart, with the home map completed in the first week and the neighborhood map completed the following week. The word "home" and boundaries of the home were specified to children to create a standard of understanding. The word 'environment' was explained as 'our surroundings, the places and things that are around us'. A subsample of children (n = 44) were given disposable cameras and asked to take about 8 photos. One week after camera distribution, film was collected and processed. Photographs were developed and returned to each child to provide a brief written explanation for each of their photos. The children wore the accelerometers approximately 6 weeks prior to completing the maps and taking the photographs for 8 consecutive days. Only children with more than 10,000 steps per day were included. Day 1 and 8 were not included in data report because of fittings and collection. Children wore the accelerometers during March/ April of 2002. All children received individualized feedback about their physical activity participation in the form of a brief report and were given compensation (e.g. sports drink bottle, balls, frisbees) for participating in the study. ***LIMITATIONS:*** Data was based on child perception; study design was cross-sectional; the sample was homogenous, as only 3 schools were used, making generalizations difficult; the sample was small which limited statistical power	10.1 ± 0.4 years old (evaluation sample) ***ELIGIBILITY:*** Schools were eligible for participation if: they were government funded coeducational primary schools, they had more than 500 students enrolled, and facilities were adequate for fundamental motor skill lessons and physical education. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from Deakin University in Australia ***THEORY/ FRAMEWORK:*** Ecological Systems Theory ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Not reported ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. There were no associations between perceived environmental variables and low or moderate intensity activity among boys. 2. Among girls, physical activity opportunities in the neighborhood were positively associated with low intensity activity [F (1, 51) =5.29, p=0.03, r^2=0.09]. 3. Food locations drawn within the neighborhood showed a significant positive association with moderate intensity activity [F (1, 48) =4.16, p=0.05, r^2=0.08). 4. Sedentary and vigorous intensity activity was not associated with any environmental variables among girls. 5. Opportunities for sedentary behaviors drawn at home showed a significant positive association with vigorous activity [F(1, 60) =4.06, p=0.05, r^2=0.06] and an inverse association with time spent being sedentary [F(1, 60)=3.65, p=0.06, r^2=0.06]. (Note: The perceived environment is a composite of 11 items including, but not limited to opportunities for sedentary behavior, land use mix, access to food in the neighborhood, number of streets in neighborhood, opportunities for physical activity in neighborhood and home, opportunities for socializing in the neighborhood. Access to food in the neighborhood may overlap in designated strategy categories as it relates to both distance and availability.)

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Giles-Corti, Broomhall (2005) Australia	Access to public open spaces (POS) and presence/ absence of features associated with public open spaces (play equipment) ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** Survey: 1773 adults from households in a 408-km2 area of metropolitan Perth, Australia; Audit: 516 POS; Observations: 772 users of 12 POS ***PRIMARY OUTCOMES:*** Meeting physical activity recommendations and walking ***MEASURES:*** 1. The Public Open Space Tool [POST] (four domains: activities [types of usage, specific activities for which the space was designed]; environmental quality [birdlife, trees, paths, shade, slope, irrigation, dogs, graffiti]; amenities [play equipment, barbecues, tables, parking, restrooms, seating, fencing, rooms, trash cans, water fountains, food]; and safety [lighting, visibility, types of roads, crossings]) 2. Survey of residents (frequency, duration, and intensity of physical activity, walking for recreation and transportation in the previous two weeks) 3. Observations of POS users (estimated age and gender of users, activity performed, who the user was with, and total time spent at POS) ***DATA COLLECTION:*** Data for the present study was collected as part of the Studies of Environmental and Individual Determinants of physical activity. The POST audit and survey were conducted from 1995-1996, and observations were conducted in 2002. POST audit data was collected by 2 trained observers who visited 10-15 public open spaces per day. The POST audit tool was developed previously through literature reviews and focus groups. Content validity was assessed by a variety of professionals and was reliable with a kappa coefficient=0.6-1.0. Observations were conducted for pairs of public open spaces from low-, medium-, and high-socioeconomic status areas, matched to the same postal code and audit score differential of 30 points. All public open spaces were monitored on the same Saturday from 7:30am to 5:30pm on days when temp ranged from 20-32 degrees Celsius. ***LIMITATIONS:*** The sample was limited to residents of socially advantaged and disadvantaged areas	18-59 years old 48.5% Lower income ***ELIGIBILITY:*** Eligible participants were employed adults, 59 years old and younger, healthy, and in non-active professions. The study was restricted to public open spaces >2 acres. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from the University of Western Australia and Curtin University of Technology (evaluation). ***THEORY/ FRAMEWORK:*** Social ecologic model ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Western Australian Health Promotion Foundation (Healthway) ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Based on POST audit and survey data, those who used public open spaces were nearly three times as likely as others to achieve recommended levels of activity (overall sufficient physical activity OR=2.66, 95%CI=2.10,3.37; >150 minutes of walking per week OR=2.78, 95%CI=2.19,3.54; >180 minutes of walking per week OR=2.82, 95%CI=2.17,3.67). 2. Based on POST audit and survey data, the accessibility of public open spaces was not significantly associated with achieving overall sufficient levels of physical activity as recommended. 3. Based on POST audit and survey data, those with good access to large, attractive public open spaces were 50% more likely to achieve high levels of walking, or >180 minutes per week (OR=1.50; 95%CI=1.06,2.13). 4. Observational data indicated that high-scoring public open spaces were more likely to attract walkers, joggers, and those seeking passive pursuits. ***USE:*** 5. Based on POST audit and survey data, overall use of public open spaces were positively associated with accessibility regardless of model used (p<0.0001). 6. Based on POST audit and survey data, compared to those with very poor access, those with very good access to large, attractive public open spaces were twice as likely to use public open spaces (OR=2.05, 95%CI=1.52,2.75; p<0.0001).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Kaczynski, Potwarka (2008) Canada	Access to parks and park amenities (water fountain, toilet, trash can, bench, bike rack) ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Distance to neighborhood parks *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 380 residents from 4 neighborhoods (2 mixed-use, grid-like street patterns; 2 residential, curvilinear street patterns) in a medium-sized city in Ontario, Canada ***PRIMARY OUTCOME:*** Park-based physical activity ***MEASURES:*** 1. 7-day Physical Activity Log (duration, intensity, and location of physical activity) 2. Environmental Assessment for Public Recreation Spaces [EAPRS] (presence or absence of 28 park features, facilities [trails, open space, playgrounds], and amenities [water fountain, toilet, trash can, bench, shelter, bike rack]) 3. Neighborhood Environment Walkability Survey [NEWS] (perceptions of neighborhood safety and aesthetics) 4. Geographic Information Systems [GIS] (mapped neighborhoods [street and park layers], geo-coded residences, calculated distance to each park) 5. Municipality database (park size) ***DATA COLLECTION:*** In late summer 2006, trained research assistants went door-to-door to distribute and explain study packages. 10 days later staff returned to collect completed forms. Staff coded the location descriptions for each physical activity episode for use of a park within the participants' neighborhood. Park and physical activity data were collected during the same period. Two trained researchers observed parks using the EAPRS tool during August 2006 (ICC=0.81). The NEWS was collected within 500 meters of each park to calculate measures of safety and aesthetics using 12 items on a 4 point scale. ***LIMITATIONS:*** Use of straight-line rather than street-network distance from parks to homes may have affected the observed importance of distance; neither objective crime data around the parks nor data describing the safety of individual parks were collected	Adults, 18-88 years old with mean age of 45.8 years, 36.2% Men (evaluation sample) ***ELIGIBILITY:*** Not reported ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from the University of Waterloo, the Seattle Children's Hospital Research Institute, and the Department of Pediatrics at the University of Washington. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** National Cancer Institute of Canada via the Socio-behavioral Cancer Research Network and the Centre for Behavioral Research and Program Evaluation at the University of Waterloo ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Of the 3 park variables (i.e., size, features, distance), only the number of features was a significant predictor of a park being used for some physical activity (OR=1.45, 95% CI= 1.09-1.82, p=0.03). 2. Only the number of facilities was significantly associated with increased odds of at least some physical activity occurring in the park (OR=2.04, 95% CI= 1.05-3.96, p=0.03). 3. The presence of paved trails, was significantly related to park-based physical activity (OR=25.93, 95% CI=2.15-312.51, p=0.01).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Duncan, Mummery (2005) Australia	Access and distance to opportunities for physical activity ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Neighborhood safety 2. Street connectivity and aesthetics 3. Distance to footpaths and parks *Complex:* 1. Social support	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 760 respondents from Rockhampton, Queensland ***PRIMARY OUTCOMES:*** Meeting physical activity recommendations and recreational walking ***MEASURES:*** 1. Active Australia Physical Activity Questionnaire (sociodemographic factors, self-efficacy, walking for leisure and transport, intensity, duration, and frequency of physical activity, safety, aesthetics, accessibility) 2. Geographic Information Systems [GIS] (linking residence with environmental measures, euclidian and street distance, amount of streetlights) 3. Electronic White pages (location of news agent outlets) ***DATA COLLECTION:*** Data used for this study was collected in August 2001 and September 2001. Levels of self-efficacy (Cronbach alpha=0.76) for performing physical activity and 4 social support items (Cronbach alpha=0.77) were assessed individually using a five-point Likert scale from 'not at all confident'/'never' to 'very confident'/'very often'. All items were subsequently summed to form a single item for self-efficacy and social support and dichotomized into high and low categories using a mean split. The Active Australia Physical Activity Questionnaire has shown good test-retest reliability. Participation in 'sufficient' levels of physical activity was defined as attaining 150 minutes of activity throughout the previous week in all activities excluding vigorous gardening, derived from national activity guidelines. Lighting information was provided to RCC in 2002 by the State's electrical supplier. ***LIMITATIONS:*** Survey data was self-reported; causal inferences cannot be made using a cross-sectional study; geo-coding was performed 17 months after the questionnaire was given; dog registration and street lightning data were taken one year after questionnaire collection; sample was taken from a very specific geographic location	General population Ages 18 and older ***ELIGIBILITY:*** All participants were 18 years of age or older at the time of the survey and lived in a residence that was accessible by land-based telephone and could be geo-coded. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from Central Queensland University ***THEORY/ FRAMEWORK:*** Social ecologic model ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Queensland Health as part of 10,000 Steps Rockhampton ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. People with the most proximal parkland beyond a network distance of 0.6 k, were 41% more likely to achieve recommended levels of activity than those with parkland within this distance (OR=1.41, CI=1.01-1.97). 2. People who had unacceptable route directness to the nearest parkland were 41% more likely to achieve sufficient levels of activity than those people who had acceptable route directness to parkland (OR=1.41, CI=1.00-1.98). 3. People who did not agree that the neighborhood footpaths were in good condition were 38% more likely to participate in recreational walking than those who thought the footpaths were in good condition (OR=1.38, CI=1.00-1.91). 4. Euclidian distance of 0.4 km from their home were 69% less likely to walk in the previous week than those who had a footpath within that distance from their place of residence (OR=0.31, CI=0.18-0.55). 5. Overweight people were 64% more likely to engage in walking than healthy weight individuals (OR=1.64, CI=1.15-2.33). 6. People whose home was classified as being in the middle tertile of registered dog numbers within 0.8 km were 66% more likely to have reported some recreational walking than those people living in a residence with the lowest tertile of registered dog numbers (OR=1.66, CI=1.13-2.43). 7. People not agreeing that their neighborhood was clean and tidy were 2.67 times more likely to attain sufficient levels of activity than those people who agreed with the statement (OR=2.67, CI=1.28-5.55). ***OTHER:*** 8. People reporting high levels of self-efficacy were 93% more likely to attain sufficient activity than those people reporting low levels of self-efficacy (OR=1.93, CI=1.40-2.64). 9. People reporting high levels of social support for activity were 65% more likely to participate in recreational walking than those people who reported low levels of social support [OR=1.65, CI=(1.17-2.34)]. (No p-values provided)

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Carnegie, Bauman (2002) Australia	Access to open spaces (beaches and parks) ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of neighborhood traffic safety 2. Land-use mix 3. Neighborhood aesthetics 4. Perceptions of neighborhood safety (dogs barking) *Complex:* 1. Friendliness of neighborhood	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 1,197 adults ***PRIMARY OUTCOME:*** Walking behavior ***MEASURES:*** 1. Survey (environment, intensity, frequency, and duration of physical activity [2 week and 6 month recall], sociodemographic data, stage of change, perceived walking, friendliness of neighborhood, pleasantness, accessibility to facilities, traffic) ***DATA COLLECTION:*** This study used data from interviews conducted from October 25 to November 13, 1995. The questionnaire was field tested with 30 respondents to ensure that all of the items were comprehensible. Total duration of each type of exercise/physical activity reported was multiplied by MET values (9, 3.5, and 3.5 for high-, moderate-intensity, and walking respectively). Respondents were categorized as active (>800 kcal per week) or inactive (<800 kcal/week). The reliability and validity of these two (physical activity) measures have been shown to be adequate. Behavioral and motivational questions were combined to assess identification of the respondent's stage of change for physical activity. Perception responses were recorded on a 5-point Likert scale ranging from strongly agree (1) to strongly disagree (5) (items from previous research). ***LIMITATIONS:*** Causal inferences cannot be made using cross-sectional data; survey data was self-reported; aspects of the practical environment may have been addressed in too large-scale of an area	General population, Adults, 40-60 years old, 57.4% Female (evaluation sample) The demographic composition of the sample was very similar to that provided by the most recent national census data. Respondents aged 40-45 were slightly overrepresented (29.2%), and those aged 56-60 years were slightly underrepresented (20.1%). Two percent of the resident population within the target age range was sampled for this study. ***ELIGIBILITY:*** Participants 40-60 years old were eligible. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from University of Sydney, University of New South Wales, South Western Sydney Area Health Service, Illawarra Area Health Service, and the Children's Hospital at Westmead. ***THEORY/ FRAMEWORK:*** Stages of Change (transtheoretical) Model ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** The Australian Commonwealth Department of Health Family Services funded the Illawarra Physical Activity Project. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Those who did little walking (20 minutes or less per week) reported more negative perceptions of their aesthetic environment than those who reported walking for between 20 minutes and 2 hours and those who reported walking for more than 2 hours ($F(2,1.163)=5.19$, $p<0.01$). 2. There was an independent association between the stage of change variable and the aesthetic environment ($F(2, 1.168) = 5.67$; $p<0.01$) and with the practical environment factor ($F(2, 1.157) = 12.05$; $p<0.001$). 3. Those who walked for less than 20 minutes and those who walked for between 20 minutes and 2 hours both reported that shops, parks, and beaches were less near to their home than those who reported walking more than 2 hours per week ($F(2, 1.168) = 11.24$, $p<0.001$). 4. Those who did little waking (20 min or less per week) reported more negative perceptions of their aesthetic environment than those who reported walking for between 20 min and 2 hr and those who reported walking for more than 2 hr ($F(2, 1.163)= 5.19$, $p<0.01$). 5. Those who walked more than 2 hours per week ($M=2.96$, $SD=1.1$) strongly agreed that they perceived traffic to be bothersome more than those who walked less than 20 minutes per week ($M=3.15$, $SD=1.12$; $F(2, 1.168)=5.19$; $p=0.006$). 6. The "dogs barking" variable showed no relationship with walking activity nor did the "safety at night" question. 7. The "feel safe walking at night" question was much more of an issue for women than men ($M=3.7$ for women and 2.4 for men, $p<0.001$), showing that women felt much less safe than men walking at night.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Playgrounds - United States						
Jago, Baranowski (2006); Jago, Baranowski (2005) Texas	Proximity to playgrounds ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Availability of neighborhood features in good condition (sidewalks) 2. Perceptions of neighborhood safety from crime and unattended dogs 3. Street connectivity and intersection density *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 210 Boy Scouts from 36 Troops in the Houston, TX area ***PRIMARY OUTCOMES:*** Overweight/obesity, physical activity (PA), and sedentary behavior ***MEASURES:*** 1. Height and weight (Body Mass Index [BMI]) 2. Accelerometer (physical activity) 3. Parental self-report (demographic data) 4. Systematic Pedestrian and Cycling Environmental Scan [SPACES] (walking and cycling ease, tidiness, sidewalk characteristics, street access and condition [within 400-m radius of residence]) 5. Perception of environmental characteristics (proximity to playgrounds, neighborhood safety and crime, presence or absence of features like sidewalks, presence of dogs) 6. Geographic Information Systems [ArcGIS] software (geocoded address, environment features, street connectivity [intersection density]) 7. Park Boundaries and Categorization (types of parks, boundaries, and present amenities) 8. Yellow pages, City Council and City Public Health records (location of gymnasiums, health clubs, and recreation centers, and the number of food establishments within a 1-mile radius of residence) 9. North American Industry Classification System (NAICS) codes (types of restaurants and grocery stores) 10. Local transit authority (all city transit stops [bus and light rail]) 11. US Census Bureau (block group data; residential density) 12. TETRAD ("Crime-risk" data set; prevalence of crime in the neighborhood) ***DATA COLLECTION:*** Accelerometers were attached to participants and worn for 3 consecutive days. 3 observers attended a 6-day SPACES training session that began with categorization and progressed to coding city segments. Observers were required to achieve an agreement rate of at least 85% during training and attend a monthly retraining session. Residence was geo-coded and boundaries with a radius of 400 m were developed. Observers walked streets in either a south-to-north or west-to-east direction. Transit locations were geo-coded to provide an indication of participant access. ***LIMITATIONS:*** Small sample size was limited to one gender and a homogenous ethnic composition; only 2 days of completed accelerometry data were necessary for inclusion; accelerometry data, troop meetings, and thus observations occurred on different nights of the week, which may have limited the ability to detect relationships with physical activity	Male, 10-14 year olds (mean age=12.8) 69% Anglo-American, 3.3% African-American, 18.6% Hispanic, 9.1% other ethnicity (evaluation sample) ***ELIGIBILITY:*** Informed consent was obtained for all participants. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The researchers were from University of Bristol, and Baylor College of Medicine. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Robert Wood Johnson Active Living Research Program, American Cancer Society, US Department of Agriculture ***STRATEGIES:*** Not applicable	***OVERWEIGHT/OBESITY:*** 1. BMI was significantly negatively associated (t= -2.09, p=0.037) with minutes of moderate-to-vigorous activity. ***PHYSICAL ACTIVITY:*** 2. Walking and cycling ease was positively associated with tidiness (r=0.198, p=0.004) and negatively associated with street access and condition (r= -0.197, p=0.005), parks (r= -0.136, p=0.05), and crime (r= -0.325, p<0.001). 3. Only sidewalk characteristics were associated with physical activity, with a positive association with light intensity physical activity (r=0.204, p=0.003) and a negative association with sedentary behavior (r= -0.199, p=0.004). 4. In the spatial regression model, sidewalk characteristics were significantly negatively associated with minutes of sedentary activity (t= -2.70, p=0.008), while age was positively associated (t= 2.25, p=0.025). 5. Sidewalk characteristics were positively (t= 2.85, p=0.005) and age negatively (t= -2.74, p=0.007) associated with minutes of light-intensity physical activity. ***OTHER:*** 6. Sidewalk characteristics were negatively associated with street access and condition (r=-0.292, p<0.001), parks (r=-0.198, p=0.004), and crime (r=-0.446, p<0.001). 7. Street access and condition was positively associated with self-reported environmental features (r=0.229, p=0.001). 8. Self-reported difficulty, and self-reported access and safety were positively correlated with each other (r=0.591, p<0.001). 9. Self-reported difficulty (r=0.224, p<0.05) and self-reported access and safety (r=0.230, p<0.001) were both positively associated with street access and condition. 10. Crime was positively associated with gyms (r=0.156, p=0.023). More results in text related to age, educational attainment, and physical activity.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Burdette, Whitaker (2004) Ohio	Proximity to nearest playground ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of neighborhood safety 2. Distance to fast food restaurants 3. Distance to nearest playground from residence *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 7,020 3-4 year-old children enrolled in the Women, Infant and Children (WIC) program and residing in one of the 46 (of 52) Cincinnati neighborhoods for which crime statistics were available from the city police department. ***PRIMARY OUTCOME:*** Weight status (BMI) ***MEASURES:*** 1. Ohio WIC Program database (height, weight [body mass index (BMI)], sociodemographic data, poverty ratio) 2. ArcView Geographic Information Systems [GIS] data (spatial location of residence, playground, and fast food, street travel distances) 3. Hamilton County Health Department database (distance from child's home to nearest playground) 4. Cincinnati Police Department's website [proxy for safety] (number of serious crimes [murder, rape, robbery, burglary, aggravated assault, larceny, and auto theft] and number of 911 police calls) 5. Yellow pages (distance from child's home to nearest fast food location) ***DATA COLLECTION:*** The research team used the Ohio WIC database for child demographics and used most recent WIC visit to calculate BMI. Data from the Hamilton County Health Department playground inventory database, containing 394 playgrounds, were collected for the city and surrounding county. Researchers identified 8 fast food chains using criteria: a) had franchises nationwide or multiple states, b) had more than one franchise in Cincinnati, c) served complete meals ordered without the assistance of waiters or waitresses, and d) provided facilities for consumption of meals on site. Using yellow pages from the internet and phone book (spring 2001) the research team identified the addresses for 151 fast food franchises. ***LIMITATIONS:*** Study did not account for any variation in playground quality or yard space at the child's residence; there is no consensus definition for a fast food restaurant that has been applied in research; the study didn't use parental perception of safety; there was a lack of variation in environmental exposure variables; categorizing exposures at the neighborhood level might not lead to the most accurate classification of the exposure; the mobility of the study population may have limited the accurate assessment of all 3 of the environmental exposures used in this study	3-4 year-olds 100% Lower-income 76% Black, 24% White (evaluation sample) ***ELIGIBILITY:*** Eligible children made at least one WIC clinic visit between 1/1/98 and 6/30/01, resided in the city of Cincinnati, and were between 36 and 59 months of age at their visit ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** The evaluation was funded by the US Department of Agriculture, Economic Research Service. ***STRATEGIES:*** Not applicable	***OVERWEIGHT/OBESITY:*** 1. There was no difference in mean distance to the nearest playground or fast food restaurant when comparing children with a BMI ≥95th percentile to those with a BMI<95th percentile (playground: t=0.31 both, p=0.77; fast food: t=0.70 and 0.69, respectively, p=0.91) and when comparing children with a BMI ≥ 85th % to those with a BMI < 85th % (playground: t=0.31 both, p=0.32, fast food: t=0.69 and 0.70, respectively, p=0.43). 2. There was no significant correlation between children's BMI z scores and distance to the nearest playground or fast food restaurant. 3. When comparing overweight and non-overweight children, there was no difference in the percentage living in neighborhoods without playgrounds (3.3% vs. 4.1%, p=0.29) nor in the percentage living in neighborhoods without fast food restaurants (44.0% vs. 44.5%, p=0.84). 4. The prevalence of children with BMI ≥ 95th percentile and BMI ≥ 85th percentile did not differ statistically across the quintiles of neighborhood crime rate, but did differ significantly for 911 call rate. The percentage of children with a BMI ≥95th percentile ranged from 10.7% in the lowest quintile to 9.4% in the highest quintile (p=0.04). The percentage of children with a BMI ≥85th percentile ranged from 22.7% in the lowest quintile of call rate to 22.1% in the highest quintile (p=0.02). There was no clear trend suggesting that lower levels of neighborhood safety were associated with a higher prevalence of overweight. 5. After controlling for poverty ratio (as a measure of SES), child race, and child sex, the 3 environmental predictor variables (playground proximity, fast food restaurant proximity and neighborhood safety) were still not significantly associated with childhood overweight.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Trails (Including bicycle paths/lanes and bicycle facilities)-United States						
Brownson, Baker (2004); Wiggs, Brownson (2006) Missouri, Arkansas, Tennessee	Development of 6 walking trails, mostly located in residential parks within city limits and covered with asphalt (83%) or gravel (17%), and vary from 0.13 miles to 2.38 miles (mean=0.68 miles) in length ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* 1. Tailored newsletters, announcement for community events, and 2 messages tailored to each participant) 2. Free walking clubs for social support, providing participation incentives and organized around activities	***DESIGN:*** Before and after study ***DURATION:*** Not reported ***SAMPLE SIZE:*** 1231 residents (653 intervention, 578 control) from 6 intervention communities in the Missouri Bootheel Heart Health Project and 6 comparison communities in Arkansas and Tennessee ***PRIMARY OUTCOME:*** Walking for any purpose and physical activity [PA] ***MEASURES:*** 1. Electronic counting devices and Card reader (date of participant's last visit to trail, duration of trail walking [average min.], frequency of walking [average days per week], average number of calories burned by walking) 2. Two Risk Factor Surveys [modified Behavior Risk Factor Surveillance System [BRFSS], community level data] and other surveys (walking behavior, duration of walking in past week [min.], and total minutes walked for exercise) 3. One-page questionnaire (assessed participant self-efficacy, social support, perceived benefits and barriers, motivation, resource availability, and walking preferences], followed-up with feedback letters) 4. Interviews with Trail-walkers (short term impact of trail use [changes in walking]) ***DATA COLLECTION:*** The surveys were administered by trained interviews from December 2000 through May 2001 and from June through August 2002. The survey was developed to test baseline and post-test behavior. Personal trail cards were received by some community members tracking trail use at two trailheads when swiped through a card reader as people entered and exited. Items from the BRFSS and other recent surveys were compiled to assess physical activity correlates using a 4-item scale developed at San Diego State University (r=0.61). The interview questions drew from research from St. Louis, Missouri, San Diego, California, and South Carolina. ***LIMITATIONS:*** Data was self-reported; objective behavior assessment not conducted; quasi-experimental study design; type III error (incomplete program implementation) may have occurred; difficulty with design in sorting out which ecologic levels may be effective	Adults, Lower-income (target), 30.2% minority, 29.1% Black, 1.1% Other ethnic group (intervention), 33.8% Black, 1.9% Other ethnic group (control) (evaluation sample) The baseline sample was representative of overall population (31.5% African Americans in the sample versus 31.2% in the census) and the follow-up included a slightly higher percentage of African Americans (38.9%). Younger people and men were slightly underrepresented in the survey samples. Intervention and comparison samples were similar across socio-demographic categories. Compared with the rest of Missouri and the US, this region has significantly more poverty, is medically underserved, and has low educational levels. ***ELIGIBILITY:*** Comparison and intervention sites were matched according to size, proportion of the population that was African American, and poverty level. Participants had to be residents in the communities and non-institutionalized adults. ***EXPOSURE/ PARTICIPATION:*** Not reported	***LEAD AGENCY:*** Missouri communities and researchers from Saint Louis University ***THEORY/ FRAMEWORK:*** Ecological framework ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not reported ***ADOPTION:*** Not reported ***IMPLEMENTATION:*** This was part of the Bootheel Heart Health Project in which several community interventions took place simultaneously. Discussions included academics and individuals from the Department of Community Health to interpret social/community perceptions and gain insightful strategies. Together coalitions designed community events and programs to promote trail use. Key stakeholders were convened by coalition coordinators to identify what would be required to plan and implement the necessary actions to develop the trail. Land for trails was donated by churches, schools, and local governments. ***FORMATIVE EVALUATION:*** 1. Five focus groups (perceived benefits of walking and trail use, social factors that encourage or discourage walking and trail use, and other facilitating and inhibiting factors) 2. Key informant interviews (best strategies for increasing walking) 3. Monthly or bimonthly meetings with volunteer chair-people of the heart health coalitions (protective social factors that facilitate coalition activities and factors that hinder coalition effectiveness) 4. Coalition logs measured 8 attributes developed by Fawcett and colleagues (community action, community change, coalition building, planning products, service provided, media coverage, resources generated, other factors) ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** 1. Incentives (t-shits, etc.) 2. Newsletters 3. Land donated for trails 4. Funding to develop trails 5. Materials to develop trails 6. Community coalition 7. Walking clubs ***FUNDING:*** Centers for Disease Control and Prevention ***STRATEGIES:*** Not reported	***PHYSICAL ACTIVITY:*** 1. For the entire population, rates of 7-day walking for any purpose or for exercise declined slightly in the intervention communities compared with comparison sites (net intervention effect [minutes]= -5.6, p=0.37). 2. No group showed a statistically significant net intervention effect. 3. Among persons who used trails at baseline (16.9% of the intervention population), 32.1% reported increases in physical activity since they began using the trail. It was not possible to quantify how much their activity increased.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Evenson, Herring (2005) North Carolina	Multi-use trail (rails-to-trails project) ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* Not reported	***DESIGN:*** Before and after study ***DURATION:*** 12 months (survey administration); 12 months (from trail opening to end of study) ***SAMPLE SIZE:*** 366 adults from Durham, North Carolina ***PRIMARY OUTCOME:*** Moderate and vigorous intensity physical activity (PA) ***MEASURES:*** 1. Phone survey (height, weight, body mass index [BMI]; type, frequency, duration, and location of two most common physical activities in the past month; days and minutes of walking and bicycling activity (≥10 minutes) for recreation, exercise, work, or commuting in a usual week; days and minutes of non-occupational moderate and vigorous PA (≥10 minutes) in a usual week; number and minutes of walking/biking transportation trips in the past month; trail use; presence of sidewalks, trails, heavy traffic, safety from crime, awareness and use of new trail; general health rating; sociodemographic data) 2. Raleigh-Durham International Airport Seasonality Data (average daily temperature, dew-point, precipitation 3. Geographic Information System [ArcVIew GIS] (geocoded residential address, Euclidean distance from home to the trail) ***DATA COLLECTION:*** This study used the telephone protocol for the Behavioral Risk Factor Surveillance System (i.e., call up to 15 times for each phone number distributed across day, night, and weekends) to assess a multi-use trail opened in 2001. This evaluation focused on the extension of the trail, a 2.8-mile, 10-foot-wide paved path and 2-mile spur that opened in September 2002. Researchers administered the survey at baseline (July 2000-April 2001) and at follow-up (November 2002). Items regarding physical activity over the past month had a kappa range = 0.44-0.58. Non-occupational moderate and vigorous physical activity had been tested and found reliable (ICC=0.69). ***LIMITATIONS:*** No control group; self-reported survey data; baseline survey could influence results of the follow-up survey; study sample was not representative for that region and not large enough to detect interactions; data analysis was not adjusted for multiple testing because the study had a specific a priori hypothesis	Adults 41.2% Black 47.3% White (evaluation sample) 116.5 persons per square mile Participants who completed both surveys did not differ from those who completed only the baseline survey in general health, education, or employment. Individuals completing only the baseline survey were more often younger, unpartnered, non-Hispanic white, and male. ***ELIGIBILITY:*** Participants were eligible if they were an adult living within 2 miles of a railroad bed, spoke English, and were listed in the phonebook. ***EXPOSURE/ PARTICIPATION:*** 28,304 people lived in the project area (census data).	***LEAD AGENCY:*** Research team was from the Department of Health and Human Services and the University of North Carolina ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not reported ***ADOPTION:*** Not reported ***IMPLEMENTATION:*** Not reported ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** 1. Funds for resources to develop the trail (paved path, labor, tools for maintenance, etc). ***FUNDING:*** North Carolina State appropriations for the North Carolina Cardiovascular Health Data Unit; Centers for Disease Control and Prevention ***STRATEGIES:*** Not reported	***USE OF RESOURCES:*** 1. At follow-up, 23.9% of individuals had heard of the trail and used it at least once. ***PHYSICAL ACTIVITY:*** 2. At follow-up, among those who had used the trail, 22.5% felt that the amount of time spent being active had increased and 26.6% felt that the number of times they were active increased. 3. Multivariable logistic model analysis showed that leisure activity, leisure activity near home, moderate activity, vigorous activity, and walking for transportation did not significantly change.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Johnson, Smith (2006) Washington	Enhancement of the network of linked walking/ biking trails, as a part of the broader Washington State Nutrition and Physical Activity Plan (Healthy Communities Moses Lake) ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Established community gardens, provided classes and consultations. *Complex:* 1. Improvements in signage, safety features and amenities; improvements in existing trails; donation of land by businesses; modifications in regulations to include trail development as part of construction projects. 2. Increased breastfeeding among women through promotion, education, training and access to supportive environments for breastfeeding.	***DESIGN:*** Before and after study ***DURATION:*** >24 months ***SAMPLE SIZE:*** Estimated 29,000 residents of Moses Lake (15,000 in the city, 14,000 in surrounding areas) ***PRIMARY OUTCOMES:*** Daily trail use and nutrition ***MEASURES:*** 1. Laser counting system (trail use) 2. Evaluation surveys (healthy eating) 3. Telephone surveys (the process of community organizations; awareness of diabetes campaign) 4. Behavioral Risk Factor Surveillance System data (long term population changes in behavior and health outcomes) ***DATA COLLECTION:*** Laser counts on trail use were collected at 9 trail sites for a week in spring 2003 and 2004. Gardeners completed surveys in 2003 and 2004. However, the surveys in 2003 and 2004 were different so it did not allow for comparison between years. In 2004, a random digit dial telephone survey of 350 adults was conducted. ***LIMITATIONS:*** Community members were not interested in the evaluation activities; evaluation was never fully integrated into the projects; original team members were no longer involved after 2 years; trail use data in the control community were collected in 2003 but not in 2004 because of a staff error.	General Population Moses Lake population (self-identified): 80% White, 26% Hispanic, 2% African American, 1% American Indian or Asian, 3% two or more races. In 2003, the unemployment rate was 9.6%. Of the estimated 7000 children enrolled in the school district, 54% of them were enrolled in the free and reduced price lunch program. ***ELIGIBILITY:*** After the state Department of Health conducted interviews in 5 cities, government leaders were asked to write letters if they were interested in serving as a pilot site. The city of Moses Lake was chosen as the first Healthy Communities site based on its demographics and readiness to make environmental changes. ***EXPOSURE/ PARTICIPATION:*** Residents living close to the trails and gardens were exposed to the intervention.	***LEAD AGENCY:*** The City of Moses Lake, the Moses Lake Business Association, the Grant County Public Health District, the National Park Service's (NPS) Rivers, Trails, and Conservation Assistance Program, the Washington State Department of Health (DOH), University of Washington (UW) Center for Public Health Nutrition and Health Promotion Research Center ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** The plan included 15 evidence based strategies. ***REPLICATION/ ADAPTATION:*** Not reported ***ADOPTION:*** The NPS led charettes with residents and organizations, which produced a master plan for an integrated trail system, later adopted by the Moses Lake City Council. In 2004, a youth wellness team from the Columbia Basin Job Corps began helping with the main garden and also developed a community garden on the Job Corps site. ***IMPLEMENTATION:*** An advisory committee participated in the planning process. An ad hoc work group was formed to develop policies for Healthy Communities in Moses Lake, selecting 3 projects for the area, a timeline, and short and long-term goals. An action plan was written with technical assistance from NPS, UW and DOH staff. The Moses Lake Breastfeeding Coalition implemented the activities focused on breastfeeding. ***FORMATIVE EVALUATION:*** An inventory of existing policies and environments in Moses Lake was conducted by volunteers prior to the development of the plan. Focus groups, interviews and a mailed questionnaire raised awareness among residents of existing trails, local needs and opinions. ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** 1. Trail amenities (water facilities, bike racks, benches, restrooms, lighting, and trail maps) 2. Breastfeeding coalition activities (web site, training of licensed child care providers, luncheon for human resources staff, breastfeeding equipment, awards for employers, and nursing rooms) 3. Community garden resources (gardens, gardeners, volunteers, tool shed, soil, tools, and watering system) ***FUNDING:*** The Centers for Disease Control and Prevention's Division of Nutrition and Physical Activity ***STRATEGIES:*** A local leadership team has sustained the program (leaders from each of the projects, representatives from Moses Lake and the Grant County Public Health District and the Moses Lake Business Bureau). Local government plans and budgets for trails and community gardens have been established. Moses Lake received $340,000 from an outdoor recreation grant for the Heron trail project. There are now several projects in the design and funding stages that will result in 10 or more miles of new trails and connections between existing trails.	***PHYSICAL ACTIVITY:*** 1. Mean daily trail use was 182 individuals in 2003 and 191 individuals in 2004, with a mean increase in trail use of 8.7 (SD=6.2) individuals per day. Control data were not available. ***NUTRITION:*** 2. 29 of 61 gardeners completed surveys. 21 of these 29 reserved gardening plots. More than half of the gardeners reported eating more fruits and vegetables while participating in the garden (no statistics). ***OTHER:*** 3. 17 of the 21 participants who responded to a question about finances stated that they used the garden to stretch their food dollars. 4. The garden built a sense of community and provided access to garden space. 5. Job corps participants advocated for changes at the job corps campus (e.g., serving fresh fruits and vegetables in the dining room; healthy snacks in the vending machines).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Krizek, Johnson (2006) Minnesota	Access to neighborhood facilities for physical activity including on-and-off-road bicycle paths ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Access to neighborhood retail *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 1653 participants in Minneapolis and St. Paul, Minnesota ***PRIMARY OUTCOMES:*** Walking and bicycling ***MEASURES:*** 1. 2000 Twin Cities Metropolitan Area Travel Behavior Inventory (TBI) 24-hour diary (origins and destinations, modes of travel, duration of trips, primary activities, socioeconomic and demographic data) 2. Geographic Information Systems [GIS] map (distance from residence to destination on-street bicycle lanes and off-street bicycle paths and facilities, location of retail establishments and proximity using network distance to neighborhoods) ***DATA COLLECTION:*** The 2000 Twin Cities Metropolitan Area Travel Behavior Inventory [TBI] database, administered by the regional planning agency, was used for the present analysis. Each household kept a 24-hour diary of travel for all household members 5 years or older on a particular day. Using GIS data, individuals were grouped into categories according to distance from their homes to the nearest bicycle trail ranging from less than 400 meters to 1600 meters or more. Distance from home to the nearest neighborhood retail establishment was divided into four categories ranging from less than 200 meters to greater than 600 meters ***LIMITATIONS:*** Causal inferences cannot be made using cross-sectional data; no pre-existing attitudes preference or other motivations for walking/ biking were requested; neighborhood and amenity self-selection was not explored; children, rural, and suburban residents were not recruited for this study limiting generalizability	Adults Urban 48% Male, 36% < $50,000 annual household income (evaluation sample) 5.2% of the sample reported at least one bike trip during the survey, which is a higher rate of cycling than the larger TBI sample and the nation, for which approximately 2% ride a bike on any given day. ***ELIGIBILITY:*** Eligible participants were in the TBI diary database, residing in Minneapolis or St. Paul, and were 20 years of age or older. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from the University of Minnesota (evaluation) ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Funding from the National Cooperative Highway Research Program and the Minnesota Department of Transportation. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. The odds of bicycle use did not differ significantly by proximity to any bicycle facility suggesting proximity to these facilities generally has no effect on bicycle use. 2. Using a logistic regression model, subjects living closest to an on-street bicycle facility (less than 400 meters away) had statistically significantly increased odds of bicycle use compared with subjects living more than 1600 meters from an on-street facility (OR=2.23, $p<0.05$). 3. Using a logistic regression model, for walking behavior found those living within 200 meters of retail establishments had statistically significantly increased odds of walking compared to those in the most distant category (OR=2.51, $p<0.05$). 4. Proximity to off-street bicycle trails had no effect on bicycle use ($p>0.05$).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Wang, Macera (2004) Nebraska	Trail usage and cost-effectiveness for maintenance and construction of trail system ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Land-use mix *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** A total of 3,986 trail users on four bicycle/ pedestrian trails. Among the four trails the users ranged from 232 to 1878. ***PRIMARY OUTCOME:*** Cost ***MEASURES:*** 1. 1998 Lincoln Recreational Trails Census Report (observations for user count, types of users [e.g., skateboarders, wheelchairs]) 2. 1998 Trail Interview Questionnaire [n=378] (trail use for physical activity, general health, and/or weight loss, and cost-effectiveness [cost required for one unit of physical activity related outcome]) 3. Department of Parks and Recreation of Nebraska data (trail construction costs and maintenance) ***DATA COLLECTION:*** 1998 Trail Interviews were conducted on four trails by Nebraska Health and Human Services System. The interview questionnaire was administered on July 7 and 12, 1998. The census began at 7:00 am and concluded at 9:00 pm that evening. Because the trails were built in different years, the construction costs of the trails were adjusted to 2003 dollars using inflation calculator of the U.S. Department of Labor. Physical activity promotion was calculated by multiplying the total number of users (from the census report) by the percentage of trail users who reported being more physically active since they began using trails (from the trail interview). Promotion of physical activity for general health purposes was calculated by multiplying the total number of trail users (from the census report) by the percentage of the trail users who reported being physically active for general health (from the trail interview). Researchers assessed trail use effectiveness on weight loss by multiplying the total number of users (from the census report) by the percentage of users who reported being physically active for weight loss (from the trail interview). The cost-effectiveness ratios show the cost required for one unit of physical activity-related outcomes/items achieved (e.g., the cost required for one person who became more physically active since the person began using the trails). ***LIMITATIONS:*** The cost-effectiveness ratio is limited by the small sample size; baseline information on the levels of physical activity is lacking; seasonality was not accounted for and the census was taken one day mid-summer, which may not yield appropriate trail user counts; while trails may have varied there were only four assessed in one Midwest city	General Population (targeted population) 19-88 years old, 43 years old (mean age), 50% (questionnaire respondents) ***ELIGIBILITY:*** Individuals were eligible if they were using one of the four selected bicycle/ pedestrian trails during the census observations. ***EXPOSURE/ PARTICIPATION:*** Population in one city in Nebraska with access to the trails measured.	***LEAD AGENCY:*** Researchers were from Center for Disease Control and Prevention and Nebraska Health and Human Services System ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported. ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** In 2003, the annual construction costs ranged from US$3,467 to US$95,001 among the four trails; the annual maintenance cost ranged from US$13,316 to US$29,477. Summarizing costs and maintenance, the annual total cost was US$289,035. ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Not reported ***STRATEGIES:*** Not applicable	***COST:*** 1. Of the 3,986 trail users, 2,950 individuals were more physically active since they began using the trails. Of these users, 2,037 individuals were physically active for general health, and 327 individuals were physically active for weight loss. The corresponding cost-effectiveness ratios were US$98, US$142, and US$884. 2. Sensitivity analyses showed that when the number of trail users increased by 50%, the cost of trail development and maintenance was US$65 per user, who was more physically active since the user began visiting the trails; decreasing the number of users by 50% (to show variability) resulted in a cost of US$196. The cost for an individual who was more physically active since trail use began ranged from US$73 to US$253 when the life of trails decreased from 50 to 10 years. The range from best-case to worst-case scenarios was US$95–366 for an individual who was physically active for general health and US$590–2,287 for an individual who was physically active for weight loss.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Troped, Saunders (2001) Massachusetts	Access to a community rail-trail (Minuteman Bikeway) ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of traffic safety 2. Land use diversity *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 413 adults ***PRIMARY OUTCOME:*** Bikeway use ***MEASURES:*** 1. Arlington Physical Activity and Bikeway Survey (duration, frequency and locations for recreational physical activity; use of the trail; participation in recreational and transportation-related physical activity; neighborhood environment scale including presence of sidewalks, perceived safety, land-use, perceived steep hill and busy street barrier; distance to bikeway; socio-demographics; physical activity limitations). 2. Geographic Information Systems [GIS] data (road network, [functional] distance/access to the Bikeway from residence, busy street and steep hill barriers, road network) 3. 1994 Topologically Integrated Geographic Encoding and Referencing [TIGER] system data (street addresses for Arlington) ***DATA COLLECTION:*** This cross-sectional study mailed the Arlington Physical Activity and Bikeway Survey to adults at the beginning of September 1998. The authors sent an alert postcard prior to the survey mail-out and up to three follow-up mailings to non-respondents, in addition to a raffle of inexpensive gift certificates to increase response. Prior to calculating GIS environmental variables all survey respondents were address matched using Arlington census and TIGER data. GIS was used to measure the functional distance from homes of respondents to an access point on the Bikeway, and whether or not this route intersected a busy street or a steep hill. A steep hill barrier was defined as a route that crossed a steep slope grid of ≥10% for a continuous distance of at least 100 meters. Reliability for neighborhood environment scale was 0.68 for 110 college students. ***LIMITATIONS:*** Cross-sectional study; self-reported and objective measures of the busy street barrier were defined differently; may have been response bias in regard to Bikeway use	Adults, 6% Minority A higher percentage of respondents were women (60% vs. 54%) and had a college degree (60% vs. 40%) (evaluation sample) The racial/ethnic composition of the study was consistent with that of the general Arlington population. ***ELIGIBILITY:*** A conservative sample size estimate of 380 was chosen as a target based on an estimated Minuteman Bikeway use frequency of 50%. Individuals were eligible if they maintained residence in Arlington, MA throughout the study. ***EXPOSURE/ PARTICIPATION:*** The 1997 Arlington town census included 34,463 adult residents all of whom were exposed to the Minuteman Bikeway.	***LEAD AGENCY:*** Researchers were from the Department of Health Promotion and Education, Department of Exercise Science, and Department of Epidemiology and Biostatistics, School of Public Health, University of South Carolina. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** The Massachusetts Governor's Committee on Physical Fitness and Sports (funding), The Arlington Planning and Community Development Department and the Massachusetts Department of Public Health (in-kind support) ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Self-reported distance was also inversely associated with use of the Bikeway. Survey participants were 0.65 times as likely to use the Minuteman Bikeway for every 0.25-mile increase in self-reported distance from the trail (95%CI= 0.54-0.79). 2. Based on survey data, respondents who reported that they did not have to cross a busy street to access the Bikeway were about 2 times more likely to be Bikeway users than those who reported this barrier (OR=2.01, 95%CI= 1.11-3.63). 3. Survey participants located further from the trail as measured by GIS road network distance in the GIS multivariate model were less likely to use the Bikeway (OR=0.58, 95%CI=0.45-0.73). 4. In the GIS multivariate model, respondents who did not have to traverse a steep hill were almost twice as likely to be Bikeway users compared to those who had to cross a steep hill (OR=1.90, 95%CI= 1.09-3.32). 5. Physical activity limitation and the busy street barrier, both of which showed a statistically significant association with Bikeway use in the model based on self-reported data only (and in unadjusted analyses), were not retained in the GIS predictive model. 6. Men were about 2 times more likely to have used the Bikeway over the past 3 weeks than women (OR=1.91; 95%CI: 1.18-3.08). (Note: p-values not reported)

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Sharpe, Granner (2004) South Carolina	Access to places for physical activity ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Access to sidewalks in good condition 2. Neighborhood perceptions of safety *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 1936 respondents in two adjacent counties ***PRIMARY OUTCOMES:*** Physical activity and recommendations for meeting physical activity recommendations ***MEASURES:*** 1. Questionnaire (knowledge, perceptions, environmental and policy supports (i.e. trails, bicycling routes). This included 6 questions from the Behavioral Risk Factor Surveillance Survey [BRFSS] (moderate-to-vigorous physical activity) ***DATA COLLECTION:*** Data was collected in May and June of 2008. The questionnaire included the 2001 Behavioral Risk Factor Surveillance Survey questions for moderate and vigorous physical activity, items adapted from other surveys, and items developed specifically for this project. The BRFSS physical activity questions assessed the number of days per week and total time spent per day in moderate and vigorous physical activity. Reported physical activity levels were computed into 3 categories; meeting the guidelines for moderate or vigorous physical activity, insufficient activity, or inactivity. Individuals were placed into categories for meeting or not meeting recommendations. Questions from the survey have not been subjected to validity/reliability testing; however, a similar survey conducted in one of the same South Carolina counties has reported validity and reliability data for such items. An interviewing supervisor periodically monitored the professional interviewers for quality control. ***LIMITATIONS:*** Seasonal variation was not accounted for in this study; data was self-reported and may have been subject to over and under-reporting; the validity and reliability of the self-reported perceptions of policy and environmental factors has not been established; causality cannot be asserted because this study was cross-sectional	Adults General population 63.1% White 36.9% African-American (sample) ***ELIGIBILITY:*** Participants had to be able to engage in moderate physical activities. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from the University of South Carolina Survey Research Laboratory. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** The questionnaire was pretested and minor revisions were made prior to administration. ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** This study was supported by a cooperative agreement to the US Prevention Research Center from the Centers for Disease Control and Prevention. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. The odds ratios for gender, race, and across levels of age and income were significantly associated with decreased likelihood of meeting physical activity recommendations (data not shown). 2. Prior to adjustment, significant associations with physical activity included perceived condition of neighborhood sidewalks for walking or jogging; knowledge of mapped-out bicycling routes in the county; knowledge of mapped-out routes for walking or jogging on sidewalks or beside roadways in the county; perceived safety of areas in the county to walk, job, ride a bike, or do other physical activities; and some worksite supports (data not shown). 3. After adjustment, odds ratios remained significant for perceived condition of neighborhood sidewalks for walking or jogging (OR=2.04, 95%CI= 1.25-3.35, p<0.05), knowledge of mapped-out bicycling routes in the county (OR=1.39, 95%CI= 1.10-1.76, p<0.05), knowledge of mapped-out walking or jogging routes in the county (OR=1.33, 95%CI= 1.09-1.62, p<0.05), and worksite-provided sports teams (OR=1.30, 95%CI=1.02-1.64, p<0.05). While the presence or absence of a sidewalk on at least one side of neighborhood streets was not significantly associated with greater odds of meeting the physical activity recommendation, the perception of well-maintained neighborhood sidewalks among the 27.6% of respondents who reported the presence of sidewalks in their neighborhoods was significantly associated with physical activity (adjusted OR=2.04, 95%CI= 1.25-3.35). 4. General linear models were computed. For both unadjusted and adjusted models, the odds of meeting the physical activity recommendation were greater for higher numbers of known routes for walking or jogging in the county (least squares mean=1.41, F=5.28, p=0.02); numbers of known routes for bicycling in the county (least squares mean=0.58, F=9.45, p<0.01); number of days in a typical month respondents used a public track, trial, pathway, or mapped-out route for any type of physical activity (least squares mean =3.51, F=34.74, p<0.01); and number of days in a typical month respondents used public parks and other outdoor recreation areas for any type of physical activity (least squares mean=2.79, F=23.92, p<0.01) [statistics all from adjusted general linear model].

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Forsyth, Hearst (2008), Forsyth, Oakes (2007), Oakes, Forsyth (2007) Minnesota	Access to places for physical activity ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Neighborhood land-use mix 2. Street connectivity and presence of sidewalks 3. Perceptions of safety from crime 4. Access to public transit *Complex:* 1. Social environment	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 716 individuals from 36 neighborhoods ***PRIMARY OUTCOMES:*** Walking behavior and total physical activity ***MEASURES:*** 1. Height and weight (body mass index [BMI]) 2. International Physical Activity Questionnaire [IPAQ] (n=716) (physical activity, metabolic equivalent times scale [METs]) 3. 7-day travel and walking diary (n=709) (modified version of National Household Travel Survey) (mean miles walked) 4. Geographic Information Systems [GIS] (focus areas, street pattern, residential density) 5. Accelerometers (n=712) (physical activity [activity counts]) 6. US Census (density, street connectivity) ***DATA COLLECTION:*** The data reported is from the Twin Cities Walking Study, which was collected from April to November. The IPAQ and Travel diary, modified National Household Travel Survey, were used to assess walking behavior and overall physical activity. Accelerometer data were processed as mean total activity counts per 24-hour day and were calculated by summing counts within all valid days then dividing by the number of valid days. Accelerometer reliability in children and adolescents is ICC=0.76, and is reliable in adults as well. High density was defined as greater than 24.7 persons per gross hectare excluding water bodies only; low density was defined as less than 12.4 persons/hectare(ha). Small median block size was defined as below 2 hectare (ha), which was related to standard block sizes in the area. Large blocks were larger than 3.2 hectare(ha). Twenty per cent of participants, or 147 people, completed repeated measures for a reliability assessment. ***LIMITATIONS:*** Only the first 20 volunteers from each area were taken for the study; all potential confounders were not controlled; the threat of residual confounding was severe; self-selection was not controlled; cross-sectional study design restricts temporal and causal inferences; data was self-reported	Adults 65% Female 81% Caucasian (sample) 51% Female 76% Caucasian (2000 Census) Study participants appear relatively homogenous with respect to SES but heterogeneous with respect to density and street connectivity. The northern sector of the Minneapolis-St. Paul metropolitan area was chosen for its environmental diversity. ***ELIGIBILITY:*** Participants were ≥25 years of age, had primary residence in one of the 36 neighborhoods, and were able to walk for 20 minutes unaided. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from the University of Minnesota, Cornell University, University of Pennsylvania ***THEORY/ FRAMEWORK:*** Not reported. ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** This study was supported by a grant from the Robert Wood Johnson Foundation through the Active Living Research program. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. High density areas have twice the odds of increased travel walking as low density areas (OR=1.99; 95%CI=1.29, 3.06), but block size has no similar effect. For the negative binomial model the odds ratio was 1.47, p<0.10. 2. Larger blocks seem to increase odds ratios for leisure walking by about 40% (OR=1.40; 95%CI=0.96, 2.05). 3. There are small positive correlations between mean and median accelerometer counts of total physical activity with straight-line and network distances to the nearest video store, hardware store, and pharmacy, although not to other destinations. Park distance was negatively correlated with accelerometer readings, however while the values were significant they were low (results not shown). 4. Using Spearman's correlations there was significant positive association with accelerometry physical activity and whether people spoke to others in their neighborhood, perceptions of crime, having places to go in walking distance from their home, hills, nearness to book stores and participant's job, and access to bicycle and pedestrian paths (although significant, r values were low with the highest being r=0.13 for closeness to job or school) (results not shown). 5. Regression models reveal high density areas are marginally associated with an increase in total walking and, in some cases, total physical activity for racial minorities, those without college degrees, the less healthy, and the obese (results not shown). 6. There are very few correlations with the 3 measures of total physical activity and these are all negative correlations with measures of retail (accelerometer mean; CE: -0.3488) and commercial uses (accelerometer mean; CE: -0.3473) (p<0.05). 7. Total walking in mean miles per day is positively correlated with sidewalks (length per unit area; CE: 0.4510; length divided by road length; CE: 0.3449), street lights (CE: 0.4874), traffic calming (CE: 0.3629), and several of our many measures of connected street patterns (signs vary) (p<0.05). 8. Notably absent were any positive correlations with mixed use-apart from a modest one with miscellaneous retail (CE: 0.3505, p<0.05). 9. Travel walking measured both by survey and diary was positively correlated with social land uses (IPAQ; CE: 0.4166; Diary; CE: 0.3379), sidewalks (length per unit (lpu)/IPAQ; CE: 0.4866; lpu Diary; CE: 0.6224; length/road(l/r) IPAQ; CE: 0.5282; l/r Diary; CE; 0.5945), transit (IPAQ; CE: 0.3716, Diary; CE: 0.4652), litter/graffiti (IPAQ; CE; 0.3325; Diary; CE: 0.5238) and connected street patterns (# access pts./IPAQ; CE: 0.5176, # pts/Diary; CE: 0.5384; intersections IPAQ; CE: 0.4052, int. Diary; CE: 0.5279; 4-way IPAQ; CE: 0.4602; 4-way Diary; CE: 0.5782; nodes IPAQ; CE: 0.4284, nodes Diary; CE: 0.4673; ratio 4-way IPAQ; CE: 0.4164, 4-way Diary; CE: 0.4698) (all p<0.05). 10. Leisure walking was negatively correlated with some of the same features; transit (IPAQ CE: -0.4882; Diary CE: -0.3360), sidewalks (length/road IPAQ CE: -0.3318), street lights, connected street patterns (IPAQ # access points CE: -0.3349; IPAQ connected nodes CE: -0.3643), social land uses (IPAQ CE: -0.5067), as well as tax exempt land uses (IPAQ CE: -0.4214) (all p<0.05).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Moudon, Lee (2005) Washington	Access to recreational amenities (bicycle lanes and trails) ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of distance and land-use mix *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 608 able-bodied adults ***PRIMARY OUTCOME:*** Bicycling ***MEASURES:*** 1. Telephone survey [WBC Project] data (socio-demographic data, transit use, physical activity [frequency of bicycle use per week], attitude toward environment and transportation, household characteristics and transportation, neighborhood perceptions of distance and barriers) 2. Geographic Information Systems [GIS] data (King County assessor's offices; land-use, parcel data; Puget Sound Regional Council data [park layer and bus ridership, traffic volume, posted speed, number of traffic and bicycle lanes] agglomerations of destinations [grocery, retail, restaurants, convenience store, office, mixed use, sports facility, school, bank, fast food, post office, church]) 3. Walkable and Bikeable Communities [WBC] Analyst (ArcView 3.2 extension; uses buffers to find environmental measures of walkability/ bikeability) ***DATA COLLECTION:*** Data are from the Walkable and Bikeable Communities (WBC) project. The survey was administered in the Summer and early Fall of 2002. Respondents are dichotomized into cyclists (bicycled at least once per week) and non-cyclists. The telephone survey used items from validated questionnaires. Survey reliability was examined during the project pilot testing phase. Objective built environment measures specially created for this study include 24 individual destination-based land uses that may attract or hinder cycling. Three sets of specified GIS measurement types were gathered using the WBC Analyst including: (a) home-based proximity measures (up to 3 km from home), (b) home-based buffer measures, and (c) neighborhood center-based measures. Airline and Network models were created. ***LIMITATIONS:*** Survey data was self-reported; causal inferences cannot be assessed using cross-sectional data; neighborhood self-selection was not considered; generalizability is limited to a particular sample frame	Adults (18+ years General population Urban (target population) The survey respondents are shown to be fairly representative of the sample frame. ***ELIGIBILITY:*** Participants were eligible if they had a telephone, were able-bodied, and were 18 years and older. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from the University of Washington, Texas A&M, Seattle Pacific University, and the Centers for Disease Control and Prevention. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** This study was supported by the Centers of Disease Control and Prevention through the University of Washington Health Promotion Research Center. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Perceived presence of destinations (grocery stores and schools) is negatively associated with the odds of cycling (Airline OR=0.702; p<0.10 and Network OR=0.718; p<0.10). 2. Summed area of convenience store parcels (Airline; OR= 0.822, Network; OR= 0.784, p<0.01), number of parcels within the closest NC10 [office, fast food, and hospital] (Airline; OR= 1.160, Network; OR= 1.238, p<0.01, p<0.05, respectively), and distance to the closest trail (Airline; OR= 0.801, Network; OR= 0.728, p<0.01) were significantly positively associated with the odds of cycling. 3. Most parcels in the closest NC10 (office+fast food+hospital) from home are moderately related to the increased odds of cycling (Airline OR= 1.160, p<0.1, Network OR= 1.238, p<0.05). 4. Perceived presence of recreational amenities (bicycle lanes/ trails) is positively associated with the odds of cycling (Airline OR=1.704; p<0.01 and Network OR=1.729; p<0.01). 5. Variables that capture the perception of problems related to automobiles (such as traffic congestion) and the perceived presence of auto-oriented facilities (such as large parking lots in the neighborhood) show a curvilinear relationship with cycling for both Airline and Network models (p<0.10 and p<0.05, respectively). Those who responded neutrally to these factors had the highest likelihood of cycling, compared to those who disagreed or agreed.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Trails (Including bicycle paths/lanes and bicycle facilities)-International						
Merom, Bauman (2003) Australia	Construction and impact of a Trail cycle-way and use ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* 1. Map of the trail, newspaper ads (6 community papers), local radio ads 2. Full-color brochures were distributed to local organizations, high schools, and motor registries 3. Launch event 4. Promotional campaign launched to develop awareness of the facility and its location and encourage use.	***DESIGN:*** Before and after study ***DURATION:*** Not reported ***SAMPLE SIZE:*** 450 adults ***PRIMARY OUTCOMES:*** Walking and cycling and trail use ***MEASURES:*** 1. Pre- and post-campaign surveys (walking and cycling behavior, short-term intention for activity and future use, awareness and use of the new trail, sociodemographic data, barriers for trail use, purpose of use, campaign impact [recall from past month], campaign reach [knowledge of the bicycle walking trail]) 2. Bike Counters (traffic volumes by type and speed, patterns of usage) 3. MapInfo geo-coding (Geographic Information Systems, GIS) data (distance of residence to trail) 4. Meteorology stations (daily rainfall, minimum and maximum temperatures) 5. Electronic White Pages (respondent contact information) ***DATA COLLECTION:*** The pre-campaign survey was conducted from November, 16 to December 4, 2000. The post-campaign survey was conducted from March, 1 to March 2001. Respondents were divided between "inner" area residents (within 1.5 kilometers of the Trail) and "outer" residents (1.5 to 5 km from the Trail). Questions about barriers for trail use, purpose of use, and likelihood of future use were only collected post-campaign. Bike counters were placed in four locations along the trail and monitored cycling activity every quarter of an hour, hourly, and daily between October 20, 2000 and Mary 15, 2001. The recall questions from the survey were similar to those used in the 1999 National Physical Activity survey, the intra-class correlation coefficients for reliability ranged from 0.6-0.8. ***LIMITATIONS:*** Self-reported data; may have been pre-launch awareness that reduced effect; may have been problems with the observed measurements	Adults, 18-55 years old Inner area residents (n=367); 57% Male, 52% aged 35-55 years, 34% non-English-speaking background Outer area residents had significantly more males (64% vs. 53%, p=0.01), a higher percentage of cyclists, and a lower percentage of respondents from a non-English speaking background (17.2% vs. 43%, p=0.001). (evaluation sample) The samples from the two locations were similar in terms of age, educational attainment, and employment status ***ELIGIBILITY:*** Eligible respondents were 18-55 years old, able to complete the questionnaire in English, and had access to a bicycle that they had ridden within the past 12 months. ***EXPOSURE/ PARTICIPATION:*** 1. Over 17,000 brochures were distributed total through local organizations, factories, high schools, and motor registries. 2. 15,000 brochures were distributed to commuters over 4 days at the launch event and on-site promotion at the rail stations.	***LEAD AGENCY:*** The authors conducted the evaluation and were from the University of North South Wales, the North South Wales Health Department, and the Western Sydney Area Health Service. The New South Wales Road and Traffic Authority (RTA) developed the Trail. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** The NSW RTA completed construction of the Rail Trail in December 2000, as part of their statewide "Bike Plan" to encourage alternative modes of transport. A local promotional campaign was undertaken in 4 local government areas (LGAs). Localized activities to promote the Rail Trail included the launch event and on-site promotion at 9 City Rail stations. The campaign began after the trail launch on December 2, 2000 and concluded February 29, 2001. ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** 1. Funds to build the trail 2. Land for the trails 3. Funds for the media campaign 4. Brochures, newspapers, maps 5. Media advertisements (radio) 6. Supplies and funding for the Launch event ***FUNDING:*** Not reported ***STRATEGIES:*** Not reported	***PHYSICAL ACTIVITY:*** 1. There was a significant increase in Trail usage from 1.6% at baseline to 5.6% at follow-up (4.0%, McNemar p<0.005). 2. Trail use was significantly higher among bike owners than those without a bike (8.9% vs. 3.3%, p<0.014), but this association was moderated by proximity to the Trail; about one-fifth (20.5%) of bike-owners from the inner area had used the Trail compared to only 3.8% of bike owners from the outer area (p<0.001). 3. Inner cyclists increased mean cycling time by 11.9 min (+0.19 h, SD=90.9) while outer cyclists decreased cycling time by 14.3 min (-0.24 h, SD=95) (F=4.4, p=0.035). 4. Stratifying by inner and outer residence indicated that only cyclists from non-English-speaking background who lived in the inner area (n=27) significantly increased their mean cycling time from 12 min (SD=34) in the pre survey to 76 min (SD=120) in the post-survey. This significant increase in means (t=2.17, p=0.039) was mainly due to longer rides taken by a small number of this group including commuting to work. 5. The percent of those who walked and cycled declined among inner pedestrians (42.4% vs. 34%, p=0.052, McNemar), slightly among inner cyclists, and did not change for cyclists in the outer area from pre-campaign to post-campaign. 6. 26.7% (n=120) of the cohort increased their total time of walking and cycling by at least 1 hour (28.1% of inner cyclists, 25.8% outer cyclists, and 26.7% for pedestrians p=0.92). For inner residents the difference in the percentages who showed increased activity by an hour or more among Trail users (n=22) compared to non users were significant (45.5% vs. 25.7%, Fisher exact p=0.04). 7. Two Poisson regression models, one for each suburb, were created to test the effect of the period on bike counts. Time period seemed to have significant effect in both suburbs; the effect was greater in Cabramatta (OR=1.36, p=0.0001) than in Guildford (OR=1.26, p=0.0004). Weekends were positively and significantly associated with daily counts in both suburbs (Cabramatta: OR=1.64, p=0.0001; Guildford: OR=1.35, p=0.0001), while the holiday period had no significant effect. ***UNINTENDED CONSEQUENCES:*** 8. Qualitative analysis revealed that the main messages recalled in both surveys were related to other media campaigns (14.6% at baseline, 7.5% at post-survey) or the promotion of exercise equipment, local gym classes, and programs (11.8% at baseline, 10.4% at post-survey). *(continued next page)*

(Continued from previous study)						
						AWARENESS: 9. 198 (44%) respondents at baseline could not recall any generic message promoting PA and/or bike riding compare to 153 (34%) at post campaign (excluding those who could not specify any message) (p<0.001, McNemar categorical test) 10. From pre- (1.8%) to post-test (4.7%), there was an increase of 2.9% in unprompted awareness of the trail (p<0.01, McNemar categorical test). 11. Inner cyclists were almost 3 times more likely to be aware of the trail (51%, AOR=2.75, 95%CI= 1.52-4.98) than inner pedestrians (30.1%, AOR=1.27, 95%CI= 0.74-2.18) and outer cyclists (29.3%, p<0.001). 12. Significant differences were observed among local government areas, with awareness highest in the most residential parts of the trail (Fairfield; 48%, Holroyd; 42%), and lower in the business districts (Liverpool; 32.7%, Parramatta; 16.4%, p<0.001).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Garrard, Rose (2008) Australia	Access to bicycle routes that provide separation from motor vehicle traffic and use of these routes ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 6589 cyclists (5229 males and 1360 females) at 15 locations within a 7.4 km radius of the central business district of Melbourne, Australia ***PRIMARY OUTCOME:*** Bicycling behavior ***MEASURES:*** 1. Observations (number of cyclists, sex of cyclist, type of facility/route, distance) ***DATA COLLECTION:*** A census of cyclists was conducted by VicRoads (the Victorian statutory authority responsible for Victoria's network of arterial roads and freeways) at locations (mainly intersections) surrounding the Central Business District [CBD] of Melbourne in February 2004 during morning and afternoon peak commuting times. Counting was conducted for a total of four day light hours (07:00 to 09:00 h, and 16:30 to 18:30 h) 11 midweek days. Bicycle Facilities were categorized according to the degree of separation between cyclist and motor vehicle traffic: (i) 'off-road paths'; (ii) 'on-road lanes'; and (iii) 'no bicycle facility'. In all cases distances are estimates because actual trip origin and destination is unknown. ***LIMITATIONS:*** This study is an opportunistic analysis of data collected by VicRoads for internal planning purposes, and locations were not randomly selected; the 15 locations did not comprise a representative sample of the Melbourne bicycle route network; distances were estimated not known; no reliability measures were conducted; it is not possible to generalize the study findings to other large, car-oriented cities	Cyclists, General population, 79.4% Male, 20.6% Female (evaluation sample) ***ELIGIBILITY:*** Participants were eligible if they could engage in moderate physical activities ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from Deakin University and Monash University ***THEORY/ FRAMEWORK:*** Not applicable ***EVIDENCE-BASED:*** Not applicable ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** VicRoads, the Victoria, Australia governmental department of roads ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Female cyclists showed a preference for off-road paths over roads with no bicycle facilities (OR=1.43, 95% CI 1.12, 1.83; p=0.004). 2. Females preferred off-road paths over on-road lanes (OR=1.34, 95%CI: 1.03, 1.75, p=0.023). 3. The proportion of female and male cyclists using on-road lanes and roads with no bicycle facilities were almost identical after adjustment for distance (OR=1.07, 95%CI= 0.90, 1.27; p=0.46). 4. Males were observed cycling at a greater average distance [average km (Standard deviation) 3.91 (1.64) km] from the general post office than females [average km (Standard deviation) 3.43 (1.50) km]; p<0.001. ***USE:*** 5. The majority of cyclists (2869, 43.5%) were observed using on-road lanes. 6. The proportion of female cyclists that were observed cycling varied according to the type of bicycle facility (No bicycle facility =20.7% female, On-road lane= 24.1% female, Off-road lane= 16.4% female).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Recreation Centers-United States						
Zenk, Wilbur (2009) Illinois	Access and availability to places within the community for leisure activity ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of neighborhood safety 2. Access to recreational facilities and open spaces *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 252 African American females that were recruited within 3 miles of the health centers (156 exposed, 125 unexposed) ***PRIMARY OUTCOME:*** Adherence to walking plan ***MEASURES:*** 1. Heart rate monitors and Walking Log Books (physical activity/walking patterns) 2. Geographic Information Systems [ArcGIS] (geo-coded address, created 1 mile radius around home to determine neighborhood, typology of built environment including land use patterns, transportation systems, design) 3. 2004 US Census Bureau [TIGER]/Line street file (street intersection) 4. Neighborhood Walkability Index (land-use mix, street connectivity, residential and public transit stop density) 5. 2000 US Census Summary File 1 (block level data, housing unit density, demographic data, vacant housing, aesthetics including unpleasant neighborhood, physical deterioration, industrial land use) 6. 2004 Chicago Transit Authority, Metra and Pace, Regional Transportation Authority data (public transit stop density) 7. 2001 Land Use Inventory (entropy Index that is a range of land-use mix; residential, retail, professional/office, institutional, cultural/entertainment and the availability of outdoor walking space) 8. 2004 data set for Chicago, 2006 Web sites and telephone calls to other municipalities (government run fitness centers and recreation centers) 9. 2003 National Research Bureau data from NIPC/CMAP (presence of an indoor shopping mall within 5 miles of residence) 10. 2002-2005 Chicago Police Department data and Annual Illinois Uniform Crime Report Database (exact counts of reported crime incident, crime count assigned to individual's area during the 24 week adoption phase) ***DATA COLLECTION:*** This was a secondary analysis for the Women's Walking Program, a 12-month intervention trial that included a 24-week adoption phase and a 24-week maintenance phase. The adoption phase was completed between 2002 and 2005. Adherence to walking frequency was calculated as the percentage of the prescribed minimum 68 walks completed during the adoption phase. The entropy index, rated higher scores as having an evenly distributed land uses. All facility inquiries were made in the summer of 2006. Higher scores on the 4-item walkability index indicated greater walkability. ***LIMITATIONS:*** There was temporal mismatch between data collection years; much of the data collected was done at the municipal level, while physical activity was done at individual level, and Census data at block-level; small sample size; participants were from suburban and urban areas and results may not be easily generalized	40-65 year olds African-American Females Urban and Suburban 100% Minority (evaluation sample) ***ELIGIBILITY:*** Eligible participants for the walking prescription program had to be an Illinois resident, physically healthy and able to move, in the preparation or contemplation stage of motivational readiness. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from the University of Illinois, Chicago ***THEORY/ FRAMEWORK:*** Ecological framework ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** The Robert Wood Johnson Foundation, Active Living Research and the National Institute for Nursing Research ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Presence of a public recreation center with an indoor track or treadmill in the neighborhood or a shopping mall within 5 miles was associated with a 44% increase in adherence as compared without having the facility (p=0.06). Presence of both indoor facility types (recreation centers and shopping malls) was associated with a 66% increase in adherence (p=0.02). 2. Neighborhood walkability, aesthetics, recreational open space, and safety were not statistically significantly associated with adherence. There was no evidence that the environment moderated the effect of intervention group on adherence (results not shown). 3. Among suburban neighborhood residents, having one or both indoor facilities in relatively close proximity were associated with a 140% and 252% increase in walking adherence, respectively.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Dowda, Dishman (2009) South Carolina	Perceived access to physical activity facilities ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* 1. Perceived social support	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 1,126, twelfth grade girls from 22 high schools in 13 South Carolina counties ***PRIMARY OUTCOME:*** Vigorous physical activity ***MEASURES:*** 1. Height and weight (body mass index [BMI]) 2. 3-day Physical Activity Recall (3DPAR) (type of physical activity [including sedentary] and intensity level) 3. Search engines and telephone book scans [Smart Pages, White Pages, QwestDex, reverse directory, Yellow Pages] (identify team [e.g., basketball, soccer], individual [e.g., bowling, yoga], and multipurpose [e.g., recreation centers, youth organizations] and commercial activity facilities) 4. Geographic Information Systems [GIS] (geocode for participant address, map and count commercial activity facilities [within 0.75 and 2.0 street network buffers]) 5. Questionnaire (perceived equipment accessibility, access to activity facilities, perceived social support [reliable alliance, attachment, etc.] self-efficacy for overcoming barriers, school and other sport team participation in the past year) 6. 2000 US Census (block group level socioeconomic data) ***DATA COLLECTION:*** Trained data collectors employed standardized protocols using the validated 3DPAR to groups of 20-30 girls, in the spring of each study year. 3DPAR uses a script and graphic figures to explain activity intensity levels, using 30 minute blocks from 7am to 12am over 3 days of recall. Questionnaire items had an overall Cronbach's alpha of 0.80 and used adopted questions from the Youth Behavioral Risk Factor Surveillance Survey for items related to school and sport team participation. ***LIMITATIONS:*** Physical activity reported while at work was not used; all commercial physical activity facilities may not have been identified; recall data was self-reported; limited generalizability	17-18 year old Females 55.1% Black (evaluation sample) $40,689 (median sample income) ***ELIGIBILITY:*** Written informed consent was provided. ***EXPOSURE/ PARTICIPATION:*** 5,752 12th grade girls from 22 schools were invited to participate in LEAP. .	***LEAD AGENCY:*** The research team was from the University of South Carolina and the University of Georgia ***THEORY/ FRAMEWORK:*** Social-cognitive theory ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** National Heart, Lung, and Blood Institute of the National Institutes of Health ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Pearson correlations from the 0.75-mile buffer indicated that the number of multipurpose (coefficient=0.109, p<0.001) and individual (coefficient=0.089, p<0.01) physical activity commercial facilities (p=ns), median household income (coefficient=0.142, p<0.001), sport team membership (coefficient=0.326, p<0.001), perceived equipment accessibility (coefficient=0.122, p<0.001), perceived social support (coefficient=0.383, p<0.001), and barriers to self-efficacy (coefficient=0.312, p<0.001) had significant positive associations with vigorous physical activity. 2. Using a structural equation model to examine activity facilities within the 0.75-mile street network buffer showed significant (p<0.05) relationships with vigorous physical activity. Perceived access to physical activity facilities (β=-0.07) was negatively related to self-reported vigorous physical activity, while social support (β=0.24), multipurpose commercial physical activity facilities (β=0.07), barriers for self-efficacy (β=0.13), and sport team membership (β=0.16) were positively associated with self-reported vigorous physical activity. Small but significant (p<0.05) indirect relationships with VPA were observed for perceived social support (β=0.07), and perceived access to PA facilities (β=0.01). 3. There was a small, positive correlation (r=0.064) between vigorous physical activity and perceived access among girls having high self-efficacy and high social support (n=433) but a small inverse correlation (r=-0.11) among girls having high self-efficacy and low social support (n=198). When the structural equation modeling was tested separately in these two groups, the relation between multipurpose facilities and vigorous physical activity remained significant (p<0.05) in each group (β=0.11 to 0.16)

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Rutt, Coleman (2005) Texas	Availability of physical activity facilities ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Land-use mix, population density and neighborhood walking *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 953 adults living in El Paso, Texas ***PRIMARY OUTCOME:*** Walking behavior ***MEASURES:*** 1. Survey (height and weight [body mass index (BMI)], frequency and duration of walking [past month], frequency of fruit and vegetable consumption, overall health, number of diseases, social support for walking, acculturation, socioeconomic status [Hollingshead Four Factor Index of Social Status] and sociodemographic data [e.g., number of children], frequency and duration of screen time, perceived benefits of walking and barriers to exercise) 2. ArcView software (neighborhood level-sidewalk availability within a 0.25 mile radius of participant's home [photographs 1 foot resolution], bought by Public Senate Board, free to public; number of physical activity facilities, shortest distance from residence to activity facilities, intersection density [percentage of cul de sacs and 4-way intersections], geocoding of participant's residence) 3. Online Yellow Pages (location and number of gyms) 4. Topo Depot slope data (neighborhood average change in elevation) 5. City of El Paso Planning, Research, and Development Department working draft (land-use [non-residential buildings]) 6. US Census (population density) ***DATA COLLECTION:*** Participants were surveyed in English or Spanish by researchers from February to March 2001. Residential addresses were obtained through phone number matches in existing databases or reverse look-ups. For the survey, total minutes spent walking was calculated by multiplying frequency of walking by duration. Likert-type scales were used to rate specific items to provide participants with a range of answers. Total minutes watching TV or videos were calculated by multiplying frequency by average time. Finding shortest distance using ArcView software yielded an ICC of r>0.90. ***LIMITATIONS:*** No additional information was analyzed on park size or quality; examination of aerial photos to determine sidewalk availability encountered several problems (e.g., trees obscure view); telephone surveys can lead to an under-representation of low SES individuals; participants not contacted to determine if the correct address was found	Adults 71% Female (sample) Age 42±17 years (sample) 79% Hispanic (sample) Socioeconomic status score 27.5±16.5; acculturation score 3.08±1.19 (sample) ***ELIGIBILITY:*** Eligible participants required a home address that could be geocoded. Consent was obtained from each subject. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from the University of Texas at El Paso, San Diego State University. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Dodson Fellowship from the University of Texas at El Paso ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Among the subsample of subjects who reported walking for exercise in the past month, total time spent walking was related to older age and having fewer physical activity facilities in their neighborhood (β=-0.24, p=0.05) (R^2=0.11). 2. Among the subsample of subjects who reported walking for exercise in the past month, walking frequency was related to older age, fewer physical activity facilities (β=-0.24, p=0.05), and living in a more commercial neighborhood (β=0.19 p=0.02) (R^2=0.11). None of the variables were significantly related to walking duration (R^2=0.09). 3. For the entire sample, total time spent walking for exercise was related to higher socio-economic status, walking frequency was related to fewer perceived barriers (β= -0.11, p=0.03, R^2=0.07), and walking duration was related to higher socio-economic status, better overall health (β= -0.12, p=0.40), fewer perceived barriers to physical activity (β= -0.11, p=0.02), and living in a more residential area (β= -0.11, p=0.04) (R^2=0.08). 4. For all participants, no environmental variables were statistically significantly related to total time walking or walking frequency.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Powell, Chaloupka (2007) United States	Availability of commercial physical activity-related facilities ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 195,702 participants (86,602 grade 8; 84,319 grade 10; 24,781 grade 12) from approximately 420 schools across the United States (US) ***PRIMARY OUTCOME:*** Physical activity (PA) ***MEASURES:*** 1. Monitoring the Future [MTF] Survey (sociodemographic data, rural/urban neighborhood designation, substance abuse; frequency of participation in sports, athletics, or exercise, frequency of exercising vigorously [jogging, swimming, etc.]) 2. 2000 Census data (mean per capita income) 3. Bun and Bradstreet Market Place data base ([used the Standard Industry Classification [SIC] codes] location of physical activity facilities) ***DATA COLLECTION:*** This study uses data from the Monitoring the Future survey combined with external commercial measures obtained from business lists from Dun and Bradstreet, all from the years 1997-2003. The Monitoring the Future survey was administered by a representative from the University of Michigan's Institute for Social Research in classrooms during normal class periods whenever possible. 8th and 10th graders were administered 4 different forms and 12th graders were given 6 different forms; all were given in an ordered sequence. The total number of physical activity facility outlets were summed across zip codes and divided by zip code population times 10,000 to develop a measure of commercial physical activity-related facility availability per 10,000 capita. ***LIMITATIONS:*** Potential inaccuracies in the commercial outlet density data; self-reported physical activity behavior measures; no household income information available; no control for school-level physical education and intramural sport opportunities; no accounting for availability of parks and other outdoor public facilities; facility user cost was not addressed; unfortunately zip-code was the high school locator and students are most likely drawn from outside of the zip-code thus not accounting for the whole student body	14-18 year olds Nationally representative sample of high school students in the coterminous U.S. ***ELIGIBILITY:*** Students in the Monitoring the Future high schools were invited to participate ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from the University of Illinois at Chicago and the University of Michigan (evaluation) ***THEORY/ FRAMEWORK:*** Economic and Ecological Models Economic models are based on the assumption that individuals make behavioral decisions that maximize their utility based on a set of personal preferences and subject to constraints. ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** The study was supported by the Robert Wood Johnson Foundation through Bridging the Gap for the ImpacTeen and Youth, Education, and Society studies. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. The estimated effect of the availability of commercial physical activity-related facilities was significantly associated with frequent vigorous exercise among adolescents (effect=0.0026, SE=0.001; p=0.05). The magnitude of the effect dropped slightly once neighborhood per capita income levels were accounted for (effect=0.0022, SE=0.001, p=0.05).The presence of one additional physical activity-related facility per 10,000 capita was statistically significantly associated with just over one-fifth of a percentage point increase in frequent vigorous exercise. 2. For the full-sample of all grade levels, greater numbers of local-area commercial physical activity-related facilities were statistically significantly associated with both physical activity outcome measures for girls but not for boys. The presence of an additional local-area commercial physical activity-related facility was associated with a 0.20 and 0.29 percentage point increase, respectively, in frequent physical activity and frequent vigorous exercise among female adolescents (p=0.05 for both). 3. The presence of an additional local area PA-related facility was associated with a 0.57 (p=0.01) and 0.55 (p=0.05) percentage point increase in frequent physical activity and frequent vigorous exercise, respectively among 12th grade girls. The presence of an additional local area PA-related facility was associated with a 0.52 percentage point increase in frequent vigorous exercise among 12th grade boys (p=0.05). 4. The simulation results showed that increasing availability from a low (1 facility) to a high (8 facilities) number of local-area facilities was associated with a 6.6% and 9.0% increase in frequent physical activity and frequent vigorous exercise among 12th-grade girls, respectively, and a 6.4% increase in frequent vigorous exercise among 12th-grade boys.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Diez Roux, Evenson (2007) Maryland, New York, North Carolina	Access to recreational facilities ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 2723 adult residents of New York City, NY; Baltimore, MD; and Forsyth County, NC ***PRIMARY OUTCOME:*** Physical activity [PA] ***MEASURES:*** 1. Questionnaire (minutes engaged in physical activity, participation in organized activities [team sports, dual sports], individual activities, moderate- or heavy-effort conditioning activities, frequency of physical activity within 1 mile of residence, perceptions of neighborhood violence, demographic variables [age, gender, racial composition, income]) 2. Geographic Information Systems [GIS] (geo-coding of participant address, location of recreational facility) 3. Yellow pages, Internet, Departments of City planning and recreation (location, number, and type of recreational resource, fee requirements for entrance to recreational facility) ***DATA COLLECTION:*** The data used for the present study was part of the Multi-Ethnic Study of Atherosclerosis [MESA]. MESA baseline data was collected between July 2000 and September 2002. The questionnaire was adapted from the Cross-Cultural Activity Participation Study. ***LIMITATIONS:*** Data from the questionnaire was self-reported; church and school facilities, non-park trails, non-recreational facilities, and private facilities in hotels and apartments were not included as recreational resources minimizing available data	45 to 84 year olds Minority 58% The racial/ethnic composition of the sample was roughly similar to that of the geographic area from which each sample was drawn. ***ELIGIBILITY:*** Participants had to be free of clinical cardiovascular disease. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from the University of Michigan, the University of North Carolina, and the University of Minnesota. (evaluation) ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** This work was supported by the National Institutes of Health and the Columbia Center for the Health of Urban Minorities. MESA study was supported by the National Heart, Lung, and Blood Institute. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Participants with the highest density of resources were significantly more likely to report engaging in physical activity during a typical week than those with lowest density of resources (prevalence ratio [PR]=1.14, 95%CI =1.03, 1.26, p-value not shown). 2. Density of resources was positively associated with physical activity for areas ranging from 1 mile to 5 miles around residential address (1-mile PR=1.07, 95%CI= 1.03, 1.26; 2-miles PR= 1.13, 95%CI= 1.00, 1.28; 5-miles PR= 1.28, 95%CI= 1.05, 1.55, p-values not shown). 3. When associations between resource density and physical activity were investigated separately for non-fee and fee resources, associations appeared to be present only for fee resources (1-mile non-fee PR=0.99, 95%CI=0.89, 1.09; 1-mile fee PR=1.17, 95%CI=1.05, 1.29; for 5-mile non-fee PR=0.92, 95%CI=0.80, 1.05; 5-mile fee PR=1.38, 95%CI=1.18, 1.60, p-values not shown). 4. Associations between resource density and physical activity were stronger among lower income than higher income participants (1mile ρ=0.7, 2-mile ρ=0.3, 5-mile ρ=0.5) and stronger among non-Hispanic Black and Hispanic participants than among non-Hispanic White participants (1mile ρ=.001, 2-mile ρ=.100, 5-mile ρ=.070; p<0.1). 5. Five mile resource density was positively associated with weekly minutes of physical activity (difference in minutes for highest density = 29% (95%CI= -2%, 71%) vs. lowest density = 13% (95%CI= -4%, 33%) (p-values not shown). 6. Density of recreational resources was positively correlated with population density, with the correlation increasing as the project area radius increased (Spearman correlation coefficients were 0.79, 0.82, 0.86, and 0.89 for the 0.5-, 1-. 2-, and 5-mile radius, respectively).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Reed, Phillips (2005) Unknown	Access to physical activity facilities ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Distance from residence to physical activity facilities *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** The participants were 411 university undergraduate students. In fall 2001, the undergraduate enrollment totaled 9,339: 121 freshman (29%); 99 sophomores (24%); 97 juniors (24%); and 94 seniors (23%). ***PRIMARY OUTCOME:*** Physical activity (PA) ***MEASURES:*** 1. Questionnaire (participant address, exercise facilities currently used, location of the facility used, different types of home exercise equipment) 2. Modified Godin Leisure Questionnaire-Time Exercise Questionnaire (frequency and duration of physical activity over a 7-day period) 3. Home Environment Exercise Questionnaire items (quantity of home exercise equipment, specific exercise items in home, age, gender, athletic participation, and the number of semester credit hours completed) 4. Grid map (distance from the individual's residence to the identified exercise facilities) ***DATA COLLECTION:*** The researchers used a gridded map by overlaying concentric circles to determine distances from participants' residences to facilities. A questionnaire was designed using the Home Environment Exercise Questionnaire and modified items from the Godin Leisure Questionnaire. A test-retest pilot procedure (n=43) was used to establish reliability for the modified Godin Leisure-Time Exercise Questionnaire resulted in r=0.82, and the reliability coefficient for the Home Environment Exercise Questionnaire resulted in r=0.85.Researchers summed (calculation of the average distance to 1 or more facilities) the coordinates between the participants' place of residence and exercise facility for a 7-day period. If a participant reported being active at more than 1 facility during the 7-day period, a summation related the coordinates between the participant's residence and each exercise facility. The definition of intensity of physical activity was the sum of the metabolic equivalent (MET) values of the activities in which the participant engaged in during the 7-day period, multiplied by the number of minutes per activity. ***LIMITATIONS:*** Causal inferences cannot be made using cross-sectional data; questionnaire data relied on self-reporting	Adults ***ELIGIBILITY:*** University-affiliated athletes and participants from the pilot study were excluded for analysis in this study. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from Furman University and the University of Northern Colorado ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Not reported ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. There was a significant relationship between intensity of physical activity and proximity for all students ($r=0.106$; $p<0.05$). 2. The correlation between duration of physical activity and proximity to facilities was statistically significant ($r=0.119$, $p<0.05$). 3. Frequency of physical activity showed a significant negative correlation ($r=-0.195$; $p<0.05$) with proximity in male students (n=unknown). 4. It appears that as distance between place of residence and exercise facility increase, the duration and intensity of physical activity also increase. 5. Total physical activity scores and frequency of physical activity revealed no relation to the distance from their residence that participants initiated their leisure-time physical activity.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Grow, Saelens (2008) Massachusetts, Ohio, California	Access to recreational facilities ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Neighborhood traffic safety 2. Neighborhood land-use mix 3. Street connectivity and pedestrian infrastructure 4. Perceptions of safety from crime *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 87 parents of children and 124 matched parents and their adolescents from Boston, Cincinnati, and San Diego areas. ***PRIMARY OUTCOMES:*** Physical activity (PA), walking/bicycling for transportation, and swimming pool use ***MEASURES:*** 1. Survey (demographics, frequency and use of physical activity resources [e.g., exercise facility, swimming pool], proximity to sites [≤or≥10 min walk], active transport to each site). 2. Neighborhood Environment Walkability Scale [NEWS] (perceived land-use mix, street connectivity, pedestrian infrastructure, neighborhood aesthetics, traffic safety, crime threat) ***DATA COLLECTION:*** A test-retest study design was used to evaluate the reliability of all measures except demographic information. Average time between completing the 2 surveys was 27 days. Parents, children, and adolescents completed the surveys. Only responses from the first survey were used in the analyses. Site types for the survey were based on formative research using qualitative interviews and prior research. Test-retest reliability for active use of, proximity to, and active transport to/ from recreation sites range from fair to good for parents (ICC=0.32-0.75) and adolescents (ICC=0.25-0.77). ***LIMITATIONS:*** Causal inferences cannot be drawn from cross-sectional design; data was self-reported; the study was not designed to be nationally representative; potentially ambiguous survey phrases may have led to confusion; particular sites were not specified by the respondents	11-18 year old adolescents Parents: 80.5% White, 9.2% Black, and 5.7% Other Adolescents: 75.0% White, 18.8% Black, 2.7% Asian/Pacific Islander, and 3.5% Other ***ELIGIBILITY:*** Parental written consent and participant assent were required. Parents of 5-18 year-old children were eligible; the 11-18 year-old adolescents of these parents were also eligible ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from the University of Washington, San Diego State University, the University of Alabama, and the University of California, San Diego. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Robert Wood Johnson Active Living Research program ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Living within a 10-min walk of large parks (Report for children; 69.2% active, p<0.05; Report for adolescents: 55.9% active, p<0.01; Adolescent report: 47.6% active; p<0.01) and public open spaces (Report for children: 59.5% active, p<0.01, Report for Adolescents: 30.4% active, p<0.05, Adolescent report: 36% adolescents active, p<0.01) were associated with increased likelihood of being active at those sites. 2. Multivariate analysis of self-reported data revealed that walking/biking was the frequent transport for 9 of 12 sites (swimming pools: RR=1.9, p<0.05; basketball courts, RR=2.1, p<0.05; walking/running tracks: RR=3.3, p<0.01; school recreation sites: RR=2.3, p<0.05; small parks: RR=6.9, p<0.01; large parks: RR=2.9, p<0.05; playgrounds: RR=5.1, p<0.05; bike/hike/walk trails: RR=4.7, p<0.01; open spaces: RR=9.8, p<0.01) and also 8 of 12 by parent report (basketball courts: RR=4.5, p<0.01; walking/running tracks: RR=4.6, p<0.01; school recreation sites: RR=4.4, p<0.01; small parks: RR=6, p<0.01; large parks: RR=4.1, p<0.01; playgrounds: RR=5, p<0.01; bike/hike/walk trails: RR=3.7, p<0.01; open spaces: RR=7.3, p<0.01). 3. For adolescents, walking/biking to sites was associated with use of play fields and courts (parental report only: 54.5% active, p<0.05), swimming pools (self-report only: 58.5% active, p<0.01), beach/lack/river/creek (parent report: 42.9% active, p<0.01; self report: 48.5% active, p<0.01), and bike/hike/walk trail (parent report: 52% active, p<0.01; self-report: 49.1%, p<0.01). 4. Multivariate analysis of parent report revealed that site proximity was only associated with adolescents' swimming pool use (RR=2.1, p<0.05). 5. Adolescents who usually walked/biked to at least 5 sites (site median) had higher scores on perceived pedestrian infrastructure and on traffic safety both by parent report and self-report and had higher land use mix and street connectivity for adolescent report only (no statistics). 6. Parents and adolescents who usually walked/biked to at least 5 sites reported higher perceptions for pedestrian infrastructure and traffic safety. Only adolescents reported higher land-use mix and street connectivity (no statistics). 7. On the basis of adolescent and parent report multivariate regression models revealed that positive estimates were found for street connectivity, pedestrian infrastructure, and traffic safety and a negative estimate was found for crime threat in relation to the number of sites to which adolescents walked/biked. After adding proximity to the model, only traffic safety remained highly significantly associated with usual walking/biking to sites for both parent (β=0.55, p<0.01) and adolescent (β=0.3, p<0.01) reports. 8. Parents reported that children walking/biking to the site was significantly associated with active use of most recreation sites: indoor recreation sites (72.7% active, p<0.05), basketball courts (45.5% active, p<0.01), walking/running tracks (68.8% active, p<0.01), school recreation site (70.8% active, p<0.01), small (73.7% active, p<0.01) and large public parks (68.8% active, p<0.05), public playgrounds (71.1% active, p<0.05), and open space (63% active, p<0.01). The same trend was found for parental report for adolescents (indoor recreation facilities: 54.5% active, p<0.05; basketball courts: 57.5% active, p<0.01; walking/running tracks: 62.5% active, p<0.01; school recreation site: 56.7% active, p<0.01; small parks: 52.4% active, p<0.01; large parks: 59% active, p<0.01; playgrounds: 43.1% active, p<0.01; open spaces: 45.5% active, p<0.01) and adolescent self-report (indoor recreation facilities: 53.8% active, p<0.05; basketball courts: 43.4% active, p<0.01; walking/running tracks: 56.8% active, p<0.01; school recreation sites: 44.4% active, p<0.01; small parks: 50% active, p<0.01; large parks: 48.1% active, p<0.01; playgrounds: 37.3% active, p<0.01; open spaces: 50% active, p<0.01).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Gordon-Larsen, McMurray (2000) United States	Use of community recreation centers ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of safety related to serious neighborhood crime 2. Access to physical education classes and overall time spent in participating in physical activity *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 17,766 adolescents in grades 7-12 (aged 11-21 years) ***PRIMARY OUTCOMES:*** Moderate to vigorous physical activity and inactivity ***MEASURES:*** 1. Survey (socio-demographic data [sex, age, urban residence, presence of mother/father in household, pregnancy status, work status, in-school status], participation in school physical education programs, use of community recreation center, total reported incidents of serious crime in neighborhood, generation of residence in the United States, region, and month of interview) 2. 7-day recall (moderate-to-vigorous physical activity, physical inactivity) 3. 1993 Uniform Crime Reports of the US Federal Bureau of Investigation (community level data; crime rates) ***DATA COLLECTION:*** Data for this study came from the wave I sample of adolescents enrolled in the National Longitudinal Study of Adolescent Health (Add Health) measured between April and December 1995. The 7-day recall assessment employed an array of questions of questions similar to those used and validated in many other smaller studies to categorized adolescents into high, medium, and low activity and inactivity patterns with reasonable reliability and validity. Each activity grouping (e.g., skating, dance) was assigned a MET value based on the Compendium of Physical Activity developed for adults to categorize activity as low, moderate or vigorous. A composite inactivity score was calculated using the number of hours and minutes that each adolescent spent engaged in TV/video viewing and playing video/ computer games. ***LIMITATIONS:*** Data on community recreation centers were based on actual use, not availability because there are no national databases tracking availability of recreation centers; actual use may produce misleading results because physically active people may be more likely to use recreation centers	11-21 year olds, 50.8% Male, 49.2% Female, 66.7% non-Hispanic White, 16.7% non-Hispanic Black, 12.7% Hispanic, 4% Asian, 32.3% low family income (>$26,200), 37% middle family income ($26,200-50,000), 30.6% high family income (+$50,000) [evaluation sample] The sample is a nationally representative sample of adolescents in the United States. ***ELIGIBILITY:*** Eligible participants were not of Native American decent because of limited sample size and could not use any walking aids. ***EXPOSURE/ PARTICIPATION:*** Not reported	***LEAD AGENCY:*** The research team was from the University of North Carolina at Chapel Hill. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** National Institute of Child Health and Human Development, Dannon Institute Postdoctoral Fellowship in Inter-disciplinary Nutrition Science ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Individuals residing in high crime levels were less likely to fall in the highest category of moderate-to-vigorous physical activity (adjusted odds ratio [AOR]: 0.77, 95%CI= 0.66-0.91, p≤0.002). 2. Using a logistic regression revealed that females living in high crime areas were more likely to fall into the highest category of inactivity (AOR: 1.29, 95%CI= 1.03-1.62, p≤0.027). 3. Having physical education 1 to 4 times per week and 5 times per week were associated with a substantial increase in likelihood of falling in the highest category of moderate-to-vigorous physical activity (AOR: 1.44, 95% CI= 1.09-1.92; p≤0.01 and AOR: 2.21; 95%CI= 1.82-2.68; p≤0.00001, respectively). 4. Participation in physical education was not significantly associated with likelihood of engaging in high levels of inactivity. 5. Individuals using a recreation center were 75% more likely to fall in the highest category of moderate-vigorous physical activity (AOR: 1.75; 95%CI= 1.56-1.96; p≤0.00001). 6. Non-Hispanic Black ethnicity and recreation center use were associated with an increase in likelihood of inactivity (adjusted OR: 1.61; 95%CI= 1.22-2.11, p≤0.001) 7. Using a regression modeling analysis revealed that age (p≤0.00001); sex (p≤0.012); and Non-Hispanic Black (p≤0.01), Asian (p≤0.005) and Hispanic (p≤0.014) ethnicity were important factors in physical education use. In addition, sex (p≤0.021), non-Hispanic Black ethnicity (p≤0.006), the interaction between sex and Black ethnicity (p≤0.005), and the interaction between Hispanic ethnicity and sex (p≤0.018) were important factors in recreation center use.

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Adkins, Sherwood (2004) Minnesota	Access to facilities for physical activity ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of neighborhood safety *Complex:* 1. Social factors (self-efficacy and family support)	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 52 girls and their primary caregivers ***PRIMARY OUTCOME:*** Moderate-to-vigorous physical activity [MVPA] ***MEASURES:*** 1. Height and weight (body mass index [BMI]) 2. Accelerometers (physical activity) 3. Psychosocial survey (physical activity; self-efficacy, support; and family and neighborhood environment, perception of safety and access to activity facilities) ***DATA COLLECTION:*** The data used in this study were collected during baseline clinic visits for a 12-week pilot study known as the Girls Health Enrichment Multi-site Studies [GEMS]. The GEMS project implemented interventions in multiple locations; this particular pilot was conducted in an after-school setting. Anthropometric data was collected twice and averaged by trained staff. The accelerometer was worn for 3 days and the number of minutes of moderate-to-vigorous physical activity from 12pm-6pm were summed and averaged to obtain an activity value. Minutes of moderate-to-vigorous physical activity were based on childhood cut-off points of >3,200 counts/ minute. (Activity count ICC=0.87; correlated with energy expenditure r=0.86 and 0.87, p<0.001). The psychosocial survey was given to girls and parents separately during a clinic visit. Questions were rated and calculated using a Family Environment Scale. ***LIMITATIONS:*** There was a limited sample size; the cross-sectional study design does not allow for causal inferences to be made; surveys requested information on safety but did not include specifics related to what type of area; it is possible that the perception instruments were not sensitive to cultural and age differences and therefore were not able to capture certain information	8-10 year olds, Black, Female (average age: 8.8 [±0.9]) Parent composition: African-American (83%), bi-racial (4%), and white (13%) ***ELIGIBILITY:*** Parents provided consent and girls provided assent. ***EXPOSURE/ PARTICIPATION:*** Not reported	***LEAD AGENCY:*** Researchers were from the Health Partners Research Foundation, MN, the University of Minnesota, Vanderbilt University, and California Department of Health Cancer Prevention and Nutrition Section. ***THEORY/ FRAMEWORK:*** Activity-related psychosocial measures were based on social cognitive theory. ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** This research was funded by a grant from the National Heart, Lung, and Blood Institute, at the National Institutes of Health. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Perceived neighborhood safety and access to facilities for physical activity, as reported by the parent and daughter and the family environment reported by the parent, were not related to girl's activity level. 2. BMI was inversely correlated with moderate-to-vigorous physical activity (r= -0.35, p<0.01), whereas parent's self-efficacy for supporting daughter to be active was positively correlated with activity (r=0.45, p<0.001). 3. There was a trend for parent's reported support of daughter's activity level to be associated with activity (r= 0.26, p<0.06).

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Boehmer, Lovegreen (2006) Arkansas, Missouri, Tennessee	Access to recreational facilities ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Land-use mix and destinations near residence 2. Aesthetically pleasing environment and access to sidewalks and shoulders on the street 3. Perceptions of neighborhood traffic safety 4. Perceptions of safety from crime 5. Neighborhood access to fruits and vegetables and distance to supermarkets *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 2210 adults from 13 rural communities in Arkansas, Missouri, and Tennessee ***PRIMARY OUTCOME:*** Overweight/obesity (body mass index) ***MEASURES:*** 1. Weight and height (body mass index [BMI]) 2. Survey (moderate-to-vigorous physical activity [MVPA], walking behavior, sedentary leisure-time activity, perceived recreational facilities, land use, barriers related to traffic safety and crime, aesthetics, food environment, demographic characteristics, presence of quality sidewalks and shoulders on streets, availability of fruits and vegetables) ***DATA COLLECTION:*** The present study used data from a previously administered survey that used a modified version of the Behavioral Risk Factor Surveillance System [BRFSS] and was collected between July and September 2003. Demographic characteristics and moderate and vigorous physical activity were measured using standard BRFSS questions with established psychometric properties. Open-ended environmental perception items were calculated using a four-level, ordinal response scale, with most items having been tested for reliability. MVPA was stratified into 3 categories; meeting recommendations, insufficient activity, and not active. BMI and MVPA were combined to create risk categories. The lowest risk group was defined as normal weight and active (recommended MVPA) and the highest risk group was defined as obese and inactive (insufficient and not active). ***LIMITATIONS:*** Causal inferences cannot be achieved using cross-sectional data; the study did not account for selection bias or response bias; social, intrapersonal, and biological factors that interact with environmental factors were not accounted for; non-response bias may limit the representativeness of the sample; the sample over-represented women and older individuals and cannot accurately estimate the prevalence of obesity in the study population; there was a small sample size for some subgroups	Adults 74.4% Female 93.4% White 36.8% income <$25,000 59.1% income >$25,000 27% obese 31% overweight (evaluation sample) Eight communities met the US Census definition of rural; 12 were located within a nonmetropolitan county. The communities in TN and AR were selected to match the MO sites on size, race/ethnicity, and proportion of the population living below the poverty level. ***ELIGIBILITY:*** Communities with established walking trails were eligible for participation. Households within those communities within a 2-mile radius of the existing walking trails were eligible. English speaking adults were eligible to participate. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from Saint Louis University (evaluation) ***THEORY/ FRAMEWORK:*** Ecological framework ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** National Institutes of Health ***STRATEGIES:*** Not applicable	***OVERWEIGHT/OBESITY:*** *Stratified analysis:* 1. Neighborhood perceptions of having no or a few destinations within close proximity (3-6 destinations: OR=2.03, 95%CI= 1.33-3.09; 1-2 destinations: OR=1.72,95%CI= 1.13-2.62; none: OR=1.63, 95%CI= 1.07-2.5), feeling unsafe from crime (OR=2.91, 95%CI= 1.86-2.55, p<0.05), feeling unsafe from traffic (OR=2.46, 95%CI= 1.63-3.71, p<0.05), and finding the community somewhat pleasant (OR=1.73, 95%CI= 1.28-2.34) or not pleasant (OR=2.02, 95% CI= 1.29-3.15, p<0.05) were all associated with being obese/inactive. 2. Having no sidewalks or shoulders on most streets was not significantly associated with obesity nor was the availability and quality of fresh fruits and vegetables. Further distance to the nearest supermarket was associated with increased odds of obesity (OR: 1.8, 95% CI= 1.3-2.4). 3. Neighborhood perceptions of a lack of places to be physically active (OR=1.46, 95%CI= 1.1-1.94), no available equipment (OR=1.55, 95%CI=1.19-2.02), few or moderate number of destinations within close proximity (3-6 destinations: OR=1.49, 95%CI= 1.08-2.06; 1-2 destinations: OR=1.42,95%CI= 1.03-1.97), feeling unsafe from crime (OR=2.09, 95%CI= 1.5-2.92, p<0.05), feeling unsafe from traffic (OR=1.65, 95%CI=1.2-2.27, p<0.05), finding the community somewhat pleasant (OR=1.44, 95%CI= 1.13-1.92) or not pleasant (OR=1.85; 95%CI=1.31-2.59, p<0.05), and having an unmaintained community (OR=1.48, 95%CI=1.09-1.99) were all associated with being obese. 4. Perceived lack of equipment for physical activity was associated with being obese (OR= 1.8, 95% CI= 1.3-2.4) and obese/inactive (OR= 1.8, 95% CI= 1.2-2.7) among only women. 5. Women had stronger associations between obesity and indicators of poor aesthetics (OR= 1.3, 95% CI= 1.0-1.7 for interesting things; OR= 1.7, 95% CI= 1.2-2.3 for well-maintained) and feeling slightly/not at all safe from crime (OR= 2.4; 95% CI= 1.6-3.5). *Multivariate analysis:* 6. Furthest distance (>20 minutes) to the nearest recreational facility (OR=2.74, 95% CI= 1.68-4.48), having 3-6 destination types near home (OR=1.76, 95%CI= 1.09-2.84), and feeling unsafe from crime (OR=2.59, 95% CI= 1.56-4.28) were neighborhood environmental perceptions associated with being obese. 7. Furthest distance (>20 minutes) to the nearest recreational facility (OR=1.53, 95% CI= 1.1-2.11) and feeling unsafe from crime (OR=1.71, 95% CI= 1.19-2.46) were neighborhood environmental perceptions associated with being obese.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Recreation Centers-International						
Carver, Salmon (2005) Australia	Access to sports facilities ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Neighborhood perceptions of safety (unattended dogs) 2. Access to convenience stores 3. Neighborhood perceptions of safety (traffic) *Complex:* 1. Social support	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 347 adolescents and their parents in Sydney, Australia (birth cohort from the Nepean Kids Growing Up Study, 172 boys and 175 girls) ***PRIMARY OUTCOME:*** Walking (for recreation, exercise, transport and dog walking) ***MEASURES:*** 1. Parent Questionnaire (level of maternal education, perceptions of local neighborhood) 2. Adolescent questionnaire (duration and frequency of participation in walking for exercise, walking to and from school, walking for transport, walking the dog, cycling for recreation, cycling to and from school, cycling for other transport from Monday to Friday and Saturday to Sunday, presence of places for physical activity, presence of peers, safety, traffic, dogs, bullying, strangers, convenience foods, walkability/ bikeability) ***DATA COLLECTION:*** Between July 2002 and February 2003, questionnaires were completed by adolescents and their parents at home. A few items were tested for reliability in a previous study yielding an ICC=0.86 for walking to school and an ICC=0.71 for cycling to school. Perceptions of the local neighborhood were also tested in a previous study yielding an ICC range=0.63-0.91 for parents and ICC range=0.51-0.84 for children. ***LIMITATIONS:*** Data was self-reported; birth cohort may not represent the general population; cross-sectional study design	12-13 year olds mean age 13.0 ±0.2 (evaluation sample) ***ELIGIBILITY:*** Written consent was obtained. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Research team ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** National Health and Medical Research Council, Meat and Livestock Australia, Novo Nordisk, AMP Foundation, and the Raymond E. Purves Foundation ***STRATEGIES:*** Not reported	***PHYSICAL ACTIVITY:*** 1. Boys' worry about roaming dogs was negatively associated with frequency (β= -0.213, p<0.05) and duration (β= -0.194, p<0.05) of walking for exercise on weekdays, duration of walking for exercise on weekends (β= -0.189, p<0.05), and duration of walking for transport on weekdays (β=-0.159, p<0.05). 2. Girls' worry about roaming dogs was negatively associated with frequency (β= -0.164, p<0.01) and duration (β= -0.153, p<0.05) of cycling for recreation on weekends, frequency (β= -0.219, p<0.01) and duration (β= -0.183, p<0.05) of cycling for recreation on weekdays, and frequency of walking the dog on weekends (β= -0.138, p<0.05). 3. Girls' perception of road safety was positively associated with frequency (β=0.179, p<0.05) and duration (β=0.183, p<0.01) of walking for transport on weekdays, frequency of walking for exercise on weekdays (β=0.094, p<0.01), duration of walking for exercise on weekends (β=0.184, p<0.05), and frequency of walking the dog on weekends (β=0.128, p<0.05). 4. Girls' perception of convenience stores near home was negatively associated with frequency (β= -0.157, p<0.01) and duration (β= -0.15, p<0.01) of walking for transport on weekends. 5. Parents' perception that their neighborhood had good sports facilities for their child to use was positively associated with girls' frequency (β=0.115, p<0.01) and duration (β=0.092, p<0.05) of cycling for recreation of weekdays, girls' frequency of cycling for recreation on weekends (β=0.092, p<0.05), girls' frequency of walking the dog on weekends (β=0.123, p<0.05), and boys' frequency of cycling for transport on weekdays (β=0.155, p<0.05). 6. Parents' perception that there was so much traffic that it was difficult/unpleasant to go for a walk was negatively associated with girls' frequency (β=-0.164, p<0.01) and duration (β=-0.161, p<0.05) of cycling for recreation on weekends, girls' frequency (β=-0.190, p<0.01) and duration (β=-0.188, p<0.01) of walking for exercise on weekdays, girls' duration of cycling for recreation on weekdays (β=-0.109, 0.05), girls' duration of walking to school (β=-0.128, p<0.01), and boys' frequency of walking for transport on weekdays (β=-0.138,p<0.05). ***SOCIAL ENVIRONMENT:*** 7. Boys' perception of having lots of boys/girls the same age to hang out with was positively associated with duration (β=0.27, p<0.01) and frequency (β=0.242, p<0.01) of cycling for recreation on weekdays, frequency of cycling for transport on weekdays (β=0.141, p<0.05), and duration of walking for transport weekdays (β=0.129, p<0.05). 8. Boys' perception of waving/talking to neighbors most days was positively associated with duration (β=0.108, <0.05) and frequency (β=0.149, p<0.05) of walking for transport on weekdays. 9. Girls' reports of waving/talking to neighbors most days were positively associated with frequency (β=0.119, p<0.05) and duration (β=0.103, p<0.01) of walking for transport on weekdays and frequency (β=0.16, p<0.01) and duration (β=0.156, p<0.01) of walking for exercise on weekdays. 10. Girls' perception of having many friends in the neighborhood was positively associated with frequency (β=0.078, p<0.05) and duration of walking (β=0.119, p<0.01) for transport on weekdays, frequency (β=0.193, p<0.01) and duration (β=0.189, p<0.01) of walking for transport on weekends, and frequency (β=0.211, p<0.01) and duration (β=0.23, p<0.01) of walking to school. *(continued on the next page)*

(Continued from previous study)						
						11. Girls' perception of having lots of boys/girls the same age to hang out with was positively associated with frequency (β=0.118, p<0.01) and duration (β=0.1, p<0.01) of walking to school and frequency of cycling for recreation on weekends (β=0.164, p<0.01). 12. Girls' perception of having friends close to home was positively associated with frequency of walking for transport on weekdays (β=0.069, p<0.05).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Brodersen, Steptoe (2005) England	Access to places for physical activity ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 4320 students (2578 boys, 1742 girls) from 36 schools in South London ***PRIMARY OUTCOME:*** Physical activity (PA) ***MEASURES:*** 1. Height and weight (body mass index [BMI]) 2. Questionnaire (socio-demographic measures, ethnic grouping [white, black, Asian [Indian, Pakistani, Bangladeshi, or Sri Lankan, mixed, other], physical activity [frequency, duration, and intensity over the past week], sedentary behavior [time spent watching television or videos, playing video games, or playing the computer on school days and weekends], self-rated health) 3. Pubertal Development Scale [PDS] (self-identified stages of puberty) 4. Perceived Stress Scale items (perceived stress) 5. Strengths and Difficulties Questionnaire [SDQ] (behavioral adjustment; measure of pro-social behavior and psychopathology) 6. Townsend index (measure of deprivation; car ownership, housing tenure, unemployment, over-crowding [residential address matched to census information]) 7. Borough of residence data (the number of sports facilities, investment in leisure facilities, and open spaces per head of population) 8. Data from the National Meteorological Office (weather conditions during the month of assessment [average 24-hour temperature, total rainfall for the month, and average hours of sunshine]) ***DATA COLLECTION:*** Data for the present study came from results of the Health and Behavior in Teenagers Study [HABITS] which lasted 5 years beginning in 1999. The first year of the study took place with year 7 (US grade 6) students in the spring and fall. Researchers assessed classes during lesson time. A questionnaire was developed using previous designed scales and items. To derive pubertal stage, students rated themselves on 5 items on the PDS: growth spurt, pubic hair, skin changes, menarche and breast development for girls, and voice change and facial hair for boys. The PDS is highly correlated with the Tanner scale of development and was developed for use in schools. The SDQ was designed for studies with children and adolescents, shows good test-retest reliability, cross-informant consistency, and correlates with interview-derived measures. ***LIMITATIONS:*** Weather variation did not provide a consistent environment for data collection; causal inferences cannot be determined using cross-sectional data; the study used a limited geographical area over; this study relied on self-reported data; duration and frequency of physical activity were not recorded for individual days; the school physical activity environment was not recorded	11.8 years of age (average) 35% total minority (evaluation sample) The average deprivation score of the sample was more deprived than the UK population in general. Girls were at a more advanced stage of puberty than boys and had fewer sport facilities in their neighborhoods than boys, but they spent more on leisure and open spaces. Between school and student body criteria there was a sample of varying ethnicity and socioeconomic circumstances. ***ELIGIBILITY:*** Three types of schools were chosen to meet eligibility criteria; independent schools (fee-paying), affluent outer London borough schools, and more deprived inner-city area schools. In addition, a composition of mixed gender for student bodies was sought. All students within the 1st year (year 7-US grade 6) were eligible. ***EXPOSURE/ PARTICIPATION:*** The number of eligible students enrolled in Year 7 in the schools was 5,120	***LEAD AGENCY:*** The research team was from the University College London. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Cancer Research United Kingdom and the Department of Health for England. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. The number of sports pitches in the borough was related to greater physical activity (β =0.004, 95% CI=0.00 to 0.01, p=0.007) and less sedentary behavior (β = -0.02, 95% CI= -0.04 to -0.001, p=0.038) in girls, but not in boys (gender interactions, p=0.022 and p=0.002, respectively). 2. Greater public spending on sport and recreational facilities was positively related to sedentary behavior in girls (β=0.13, 95% CI= 0.05 to 0.20, p=0.002), but not in boys (gender interaction, p<0.001). 3. Boys and girls who reported poor self-rated health were less physically active (girls; β= -0.34, 95% CI= -0.45 to -0.22, p=0.001, boys; β=-0.39, 95% CI=-0.62 to -0.16, p=0.002) and more sedentary. In multivariate analysis, poor self-rated health remained associated with less physical activity for both genders (boys; β= -0.39, 95% CI= -0.57 to -0.22, p=0.001, girls; β=-0.31, 95% CI= -0.50 to -0.11, p=0.004). 4. There was a positive association between perceived stress and sedentary behavior in girls (β=0.13, 95% CI= 0.05 to 0.20, p=0.002). 5. Multivariate analysis showed that pro-social scores on the SDQ were positively related to physical activity in boys (β=0.14, 95% CI= 0.09 to 0.20, p=0.001) and girls (β=0.10, 95% CI=0.03 to 0.16, p=0.004), while conduct problems were positively associated with physical activity. 6. In multivariate analysis, older age and ethnic minority status were positively related to sedentary behavior in boys (age; β=1.75, 95% CI=0.51 to 2.98, p=0.006, ethnic; β=1.34, 95% CI=0.40 to 2.28, p=0.005) and girls (ethnic; β=2.55, 95% CI=0.84 to 4.26, p=0.005, no age statistic shown), while minority status was associated with less physical activity in girls (β= -0.20, 95% CI= -0.38 to -0.01, p<0.05). 7. Students from more affluent schools engaged in less sedentary behavior, and (for girls only) more physical activity (gender x school type interaction, p=0.01). Multivariate analysis showed that boys studying at less affluent schools and girls living in more deprived neighborhoods reported more hours of sedentary behavior. More results in text associated with deprivation, age, weather, emotional stress, gender, and physical activity/sedentary behavior.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Santana, Santos (2009) Portugal	Access to gymnasiums and swimming pools ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Neighborhood safety (property crime) *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 7,669 individuals living in 143 neighborhoods in the Lisbon Metropolitan Area (LMA) ***PRIMARY OUTCOMES:*** Overweight/obesity, physical activity, and fruit and vegetable intake ***MEASURES:*** 1. National Health Survey [NHS] 1998-1999 (height and weight [body mass index], leisure activities, fruit and vegetable intakes, vigorous and moderate intensity activity 2. Observations (ecological indices [local resources, social capital, availability of public health services, deprivation], housing inadequacy, urban sprawl, mixed land-use, availability of sport features) ***DATA COLLECTION:*** Individual level data was collected by trained interviewers for the National Health Survey 1998-99. Body mass index (BMI) was calculated from self-reported height and weight. Vigorous physical activity was considered to be competitive sports, jogging or other recreational sports, while moderate activity included walking, cycling and other light activities. A healthy diet was defined in accordance with self-reported fruit and vegetable intake on the day before the interview. At the neighborhood level, observational data was used. Three composite ecological indices (local resources, social capital and public health services availability) were created through Principal Components Analysis [PCA]. All other indicators were single measures, i.e., proxies of housing inadequacy, urban sprawl, mixed land use and availability of sport features. ***LIMITATIONS:*** Cross-sectional design does not allow for causal inferences; self-reported data	Adults General Population 53.5% Female 46.5% Male (sample) The LMA comprises 19 municipalities, 216 neighborhoods, and over 2.5 million inhabitants. The mean population of neighborhoods was 12,420 inhabitants. (reach) ***ELIGIBILITY:*** Not reported ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from the Centre for Geographic Studies, Institute for Geographical Studies University of Coimbra ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** A large body of literature has established links between the neighborhood environment and BMI. ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** The Portuguese Foundation for Science and Technology "Healthy Urban Planning" ***STRATEGIES:*** Not applicable	***OVERWEIGHT/OBESITY:*** 1. BMI increased in association with crimes against property (OR=1.02, 95% CI= 1.01-1.03, p<.05) while the odds of being obese or overweight reduced when there were public health services available (OR= 0.84, 95% CI= 0.74-0.95, p<0.05). ***PHYSICAL ACTIVITY:*** 2. Strong positive associations were found between moderate physical activity and social cohesion (OR=1.28, 95%CI= 1.09-1.52, p<0.05) and availability of public health services (OR=1.38, 95%CI= 1.14-1.66, p<0.05). 3. There was a negative association between moderate physical activity and crimes against property (OR=0.98, 95% CI= 0.97-0.99, p<.05). 4. Vigorous physical activity was negatively associated with traffic accidents involving victims (OR=0.97, 95%CI=0.93-1.02) lack of gymnasiums (OR=1.17, 95%CI=1.01-1.36, p<0.05) and swimming pools (OR=1.17, 95%CI= 1.01-1.35, p<0.05), and weaker social cohesion (OR=1.24, 95%CI= 1.01-1.52, p<0.05). ***EATING BEHAVIOR*** 5. Fruit and vegetable intake was negatively associated with the number of crimes against property (OR= 0.98, 95% CI=0.98-0.99), p<.05).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Kondo, Lee (2009) Japan	Access to gymnasiums and fitness facilities ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Residential density and land use mix-diversity 2. Perceptions of neighborhood traffic safety 3. Street connectivity and neighborhood aesthetics 4. Perceptions of neighborhood safety from crime *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 156 residents; 83 residents were in the Type A region (high residential density, land use mix-diversity, and street connectivity). 73 residents were in the Type B region (low residential density, land use mix-diversity, and street connectivity). ***PRIMARY OUTCOMES:*** Leisure and transport walking ***MEASURES:*** 1. Geographical Information System [GIS] Data (500 meter radius residence buffer, household count, land use type count, length of streets and sidewalks, intersection count, width of streets) 2. Fieldwork and Tokyo City Planning Basic Survey (land use) 3. Abbreviated version of the Neighborhood Environment Walkability Scale [ANEWS] data (residential density, land use mix-diversity, land use mix-access, street connectivity, aesthetics, and traffic and crime safety) 4. Accelerometer ([Type A=48; Type B=64] total number of walking steps) 5. International Physical Activity Questionnaire [IPAQ] (types and duration of physical activity) ***DATA COLLECTION:*** Subjects were stratified and selected using the Basic Resident Register in September 2006. This study was part of the Study on the Evaluation of Neighborhood Environments Affecting Residents' Daily Physical Activity. A self-administered questionnaire was sent by mail. After acceptance to participate an accelerometer was sent to the subjects, who had their height, weight, and age programmed into the device. Subjects were asked to wear the accelerometer for 1 week, 8 hours per day, and return it by mail. For this study the ANEWS, was translated into Japanese and pretested (n=72) finding Cronbach's alpha coefficients were 0.57-0.94 and the reliability scores were 0.61-0.95, except for street connectivity (0.46). Based on the GIS measurements or the perception scores of the ANEWS, subjects were classified as being in the high scoring group (measurement or score was equal to and above the median) or low scoring group (measurement or score was below the median). ***LIMITATIONS:*** Low response rate; causal information cannot be assessed using cross-sectional data	Adults 30-69 years old (evaluation sample) ***ELIGIBILITY:*** Participant consent was required The city has a relatively small population of 57,990 in a 699-km2 area. Those who responded to the questionnaire and wore accelerometers were significantly older than those who did not. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from the University of Tokyo and Kyoritsu Women's University ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Previous studies were used to incorporate a study high residential density, high land use mix-diversity, high street connectivity and accessibility to facilities. ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Support came from a grant provided by the Japan Ministry of Education, Culture, Sports, Science and Technology ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** *For both sexes:* 1. There were no significant differences in walking steps related to land use type, length of streets or sidewalks, number of intersections, and width of streets between the high and low scoring groups. There were no differences in walking time for leisure or transport associated with objective neighborhood measures between the high and low scoring groups. There were no differences in mean walking time for transport or cycling time for transport related to neighborhood environment perception scores between the high and low scoring groups. *For females:* 2. Mean cycling time for transport was significantly longer in the high scoring group than in the low scoring group for the number of land use types (mean ± standard error: 11.9 ± 3.0 vs. 0.8 ± 4.4; $p<0.05$) including post offices (12.1 ± 3.1 vs. 1.5 ± 4.2; $p<0.05$), banks/credit unions (15.4 ± 3.8 vs. 3.1 ± 3.3; $p<0.05$), gymnasiums/fitness facilities (31.9 ± 7.8 vs. 5.8 ± 2.5; $p<0.01$), and/or amusement facilities (16.4 ± 4.6 vs. 4.8 ± 3.0; $p<0.05$) in the area when compared to subjects without these facilities. 3. Mean total walking steps was significantly higher in the high scoring group than in the low scoring group for the walking places score (mean± standard error: 9488±511 vs. 7957 ± 538; $p<0.05$). *For males:* 4. IMean walking time for leisure was significantly longer in the high scoring group than in the low scoring group for the aesthetics score (mean ± standard error: 20.6 ± 6.0 vs. 0.6 ± 6.7; $p<0.05$) and for individuals with parks in the area compared to those without (26.2 ± 6.4 vs. 2.7 ± 6.9; $p<0.05$). 5. Mean total walking steps was significantly higher for subjects with bookstores (10568 ± 898 vs. 6983 ± 881; $p<0.01$) or rental video stores (10336 ± 962 vs. 7422 ± 873; $p<0.05$) in the area (within 10-minute walk) than for subjects without these facilities. 6. There were no differences in walking steps between the high scoring group and the low scoring group for residential density, land use mix-diversity, land use mix-access, street connectivity, and safety.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Hume, Timperio (2009) and Timpeiro, Crawford (2004) Australia	Access to sports facilities ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Neighborhood infrastructure 2. Presence of street lights and crossings 3. Access to public transportation 4. Neighborhood perceptions of traffic safety *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 309 children (121 children, 188 adolescents) from 19 state primary schools in areas of varying socioeconomic status ***PRIMARY OUTCOME:*** Physical activity (PA) ***MEASURES:*** 1. Height and weight (body mass index [BMI]) 2. Parent questionnaire (usual commute choice to school and frequency of active commute, perceptions of traffic, walking distance, strangers, road safety, sports facilities, public transport, neighborhood infrastructure and design, aesthetics, and safety, sociodemographic data) 3. Child Questionnaires (preferences for playing outside, perceptions of traffic, strangers, road safety, neighborhood sports facilities, and neighborhood social environment) ***DATA COLLECTION:*** Data for the present study came from the Children Living in Active Neighborhoods [CLAN] cohort study. Initial data were collected in 2001 and follow-up data were collected in 2004 and 2006 with an analysis in 2008. Activity was assessed in 2004 and 2006; however the predictor variables were assessed only for 2004. Height and weight of participants were measured by trained researchers at the child's school, using calibrated portable digital scales and a portable stadiometer. For both assessments, parents completed a survey at home and adolescents completed a survey at school in the presence of a teacher and research assistant. One week test retest reliability (ICC) was 0.96 among parents of 5-6 year old children and 0.97 among parents of 10-12 year old children. Individual-level Factors test-retest reliability measures among parents of younger children and among adolescents showed that all items had very agreement (81%-100%). Social factors test-retest reliability was very high for each item for follow-up (78%-98%).For initial ICC for 5-6 year old parents was 0.60 and 0.89 and for 10-12 year old parents was 0.63-0.91.Test retest reliability of these items for child perception ranged from 0.51-0.84. ***LIMITATIONS:*** Questionnaires use self-reported information; sample size and participation rates were low/attrition rates were high; minimal heterogeneity was present in the sample; causal inferences cannot be made using a cross-sectional study design	5-18 year olds mean age= 9.1±0.3 years (younger children), mean age= 14.5±0.6 years (adolescents) 47% Male (2004 evaluation sample) ***ELIGIBILITY:*** Active consent was sought and required. Eligible participants were required to maintain residence and same school enrollment throughout the study (2004-2006). ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from Deakin University and the University of Western Australia. ***THEORY/ FRAMEWORK:*** Social ecological framework ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Funding was provided by the Financial Market Foundation for Children (2004) and by the National Health and Medical Research Council and the Victorian Health Promotion Foundation (2009). ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** *Baseline 2001:* 1. Ten to twelve year old boys whose parents believed that there were no lights or crossings for their child to use were 60% less likely to walk or cycle (OR=0.4, 95% CI=0.2, 0.7, p<0.01). 2. A lower likelihood of walking or cycling among older girls, was associated with parent's belief that their child needed to cross several roads to reach play areas (OR=0.4, 95% CI=0.2, 0.8, p<0.01), that there was limited public transport in the area (OR= 0.7, 95% CI=0.4, 0.97, p<0.05), and child's belief that there were no parks or sports grounds near home (OR=0.5, 95% CI= 0.3, 0.8, p<0.01). 3. Five to six year old boys whose parents believed that there was heavy traffic in their area were 2.8 times more likely (95% CI=1.1, 6.8, p<0.05) to walk or cycle at least three times per week than other children. 4. Five to six year old girls whose parents owned more than one car and whose parents believed that public transport was limited in their area were 70% (95% CI=0.1, 0.8) and 60% less likely (95% CI=0.2, 0.9) than other children to walk or cycle at least three times per week (p<0.05 for both). *Follow up 2004-2006:* 5. Active commuting significantly increased between 2004 and 2006 among children (Mean increase=1.04 trips/week, SD=3.15, p=0.0004) and adolescents (mean increase=0.65 trips/week, SD=3.66, p=0.02). 6. Adolescents whose parents reported that there were no traffic lights or crossings available were only half as likely (OR=0.4; 95% CI=0.2, 0.8; p=0.01) to increase their active commuting, while those whose parents were satisfied with the number of pedestrian crossings in their neighborhood were twice as likely (OR=2.4; 95% CI=1.1, 5.4; p=0.03) to increase their active commuting. 7. Children whose parents knew many people in their neighborhood were more likely to increase their active commuting (OR=2.6, 95% CI=1.2, 5.9; p=0.02) compared with other children.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Mota, Gomes (2007) Portugal	Access to recreation facilities ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Access to destinations and street connectivity 2. Perceptions of neighborhood safety *Complex:* 1. Social environment	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 1561adolescents (815 girls, 746 boys) in grades 7-12 from 11 public secondary schools from Aveiro District, Portugal ***PRIMARY OUTCOME:*** Leisure time physical activity (LTPA) ***MEASURES:*** 1. Height and weight (body mass index [BMI]) 2. Leisure Time Physical Activity [LTPA] Questionnaire (student engagement in organized and non-organized sports 3. International Classification of Professions (parent socioeconomic status [occupation]) 4. Portuguese Educational system (parent socioeconomic status [education level]) 5. Screen time (duration of television and computer use [hours] past week) 6. Perceptions of Environment Questionnaire (Environmental Module of the International Physical Activity Prevalence Study: access to destinations, street connectivity, walking and cycling infrastructure, neighborhood safety, social environment, aesthetics, recreation facilities) ***DATA COLLECTION:*** A questionnaire using the Environmental Module (Perceived Neighborhood Environments) of the International Physical Activity Prevalence Study and a questionnaire for physical activity was administered. Questionnaires were completed during physical education classes in spring 2004. Questions from the survey neighborhood perception survey were previously used for Portuguese adolescents and showed good reliability (ICC = 0.36–0.79). The reliability of the leisure time activities questionnaire (in a 1-week interval) was high (intraclass correlation coefficients [ICC] = .91 and .92). Individuals who did not report organized or non-organized physical activity were classified as non-active specifically defined as NLTPA=no leisure time physical activity; ALTPA=active during leisure time physical activity. Three groups were developed for screen time; watching TV and using the computer less than 1 hour per day, 2-3 hours per day, and more than 4 hours per day. ***LIMITATIONS:*** Cross-sectional design limits inferences of causality; data is needed to replicate these findings using a longitudinal design	General population Urban 11-18 year olds, average age: 14.7 (±1.6) years (evaluation sample) ***ELIGIBILITY:*** Informed written consent was obtained from participants and parents. ***EXPOSURE/ PARTICIPATION:*** 1800 students from the 11 schools were potentially able to complete the surveys.	***LEAD AGENCY:*** Researchers were from the Research Centre in Physical Activity and Leisure, University of Porto, Porto, Portugal. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** This study was supported by two grants Fundacão Calouste Gulbenkian and PAFID. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. In girls, access to recreational facilities (Rho = 0.10, p≤0.02) and aesthetics features (Rho= 0.12, p≤0.006) were positively associated with LTPA while personal safety (crime rate) was significantly and negatively (Rho = -0.10, p≤0.02) associated with LTPA. 2. Logistic regression analysis (data not shown) showed that girls who agreed that "the crime rate in my neighborhood makes it unsafe or unpleasant to walk in my neighborhood" were more likely to be NLTPA (OR = 0.60, 95% CI = 0.39–0.91, p = .02) and that those who agreed that "there are many interesting things to look at while walking in my neighborhood" were more likely to be LTPA (OR = 1.59, 95% CI = 1.07–2.34, p ≤ 0.02). The analysis also showed in girls that the increase in 1 hour of TV watching (1 hour category to 2–3 hour category) was a significant predictor of LTPA (OR = 0.38, 95% CI = 0.15–0.99, p ≤ 0.05). 3. In girls, screen time (TV watching: Rho = -0.09, p ≤.05, p=.007; computer use: Rho = -0.10, p ≤ 0.05, p=0.006) was negative and significantly associated with leisure time physical activity (LTPA). 4. Social environment for boys (Rho= 0.11, p≤0.05) and girls (Rho = 0.08, p≤0.02) showed to be significantly associated with LTPA.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Joint Use -United States						
Farley, Meriwether (2007), Farley, Meriwether (2008) Louisiana	After school and weekend access to safe, supervised schoolyards ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* 1. Playground supplied with footballs, basketballs, jump ropes, Frisbees, balls, hoops, parachutes, a music player, and sprinkler 2. Attendants supervised playgrounds when open 3. Publicized availability of the schoolyard for free play	***DESIGN:*** Group non-randomized trial ***DURATION:*** 23 months ***SAMPLE SIZE:*** ~511 second to fifth grade students from two neighborhood schools (1 intervention; 1 control) ***PRIMARY OUTCOME:*** Non-school time physical activity ***MEASURES:*** 1. Height and weight (body mass index [BMI]; n=511 students [300=intervention]; 160 students had complete baseline and follow-up data) 2. Modified System of Observing Play and Leisure Activity in Youth [SOPLAY] (physical activity levels in the schoolyard and in the neighborhoods surrounding each school) 3. Self-reported surveys (screen time, activities during past day and weekend; n=485 [280= intervention]) 4. Daily temperature (mid-point time of play) ***DATA COLLECTION:*** Researchers collected anthropometric data from the children who were measured at baseline and at two follow-up points (15 months, 22 months). SOPLAY observations occurred after school on 46 weekdays and 16 weekend days during the school year, with 9 to 13 days occurring in every 3-month observation period. SOPLAY has previously been found to be valid and reliable. For schoolyard observations, two trained observers used mechanical counters to count children who appeared to be in the target age range and recorded the child's activity level (sedentary, walking, very active). Neighborhood observations were made in an 8-by-8 block area around each school. A driver drove slowly on standard routes, while the observer identified children outdoors who appeared to be in the target age range and recorded the child's activity level. Surveys were administered simultaneously in intervention and comparison schools on Tuesdays in March or April. ***LIMITATIONS:*** Self-reported data from young children; unable to control for time-dependent environmental factors; children who were in backyards were not counted; seasonality; only addressed physical activity levels of children not directed by adults	6-14 year olds, Urban, Lower income 99% Black; 37% house-holds headed by women (intervention population) In both schools, more than 99% of the children were African-American. ***ELIGIBILITY:*** Any children 2nd -8th grade, kindergarten, or in 1st grade accompanied by an older sibling or parent were allowed to use the intervention schoolyards. Written parental consent was required. ***EXPOSURE/ PARTICIPATION:*** The entire intervention school was exposed to the intervention (366 and 381 students grades 2-5 participated in data collection each school year for 3 years). Children's attendance after school was measured by attendants.	***LEAD AGENCY:*** The research team was from Tulane University and the University of South Carolina. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not reported ***ADOPTION:*** Not reported ***IMPLEMENTATION:*** The intervention schoolyard was open and supervised during non-school hours after school on weekdays and on weekends. Attendants (3-4), almost all of whom were teachers, were paid to provide supervision and verify consent and age. Attendants did not organize, require, or suggest specific activities to children. Before collecting data, observers were trained in SOPLAY for an average of three 2-hour trainings sessions. ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** 1. Additional liability insurance for the school ($550/ year) 2. Playground equipment and supplies 3. Paid attendants (Total= $49,000/ yr) 4. Training materials for SOPLAY ***FUNDING:*** The research was funded by a grant from the National Heart, Lung, and Blood Institute. ***STRATEGIES:*** Not applicable	***OVERWEIGHT/OBESITY:*** 1. The mean BMI change increased 2.25 kg/m^2 in the intervention school (increased access) and 2.39 kg/m^2 in the comparison school (p=0.68) (n=160). ***PHYSICAL ACTIVITY:*** 2. For all 8 quarters combined, researchers observed 30% more active children in the intervention neighborhood compared with the comparison. Neighborhood (50.4 vs. 38.7; p<0.001). 3. For the entire intervention period, 84% more children were outdoors and active in the intervention neighborhood and schoolyard combined than were in the comparison neighborhood (71.1 vs. 38.7, p<0.001). 4. Children in the basketball and equipped concrete areas were more likely than children in the field to be "very active" (31% vs. 25%,p=0.05 and 34% vs. 25%, p<0.01, respectively). Children playing in the play structure area were nearly twice as likely as those in the field to be coded as "very active" (51% versus 25%, p<0.001). ***SCREEN TIME:*** 5. From baseline to the 2 year follow-up, the percentage of children who reported watching television increased in the control school from 83% to 92% and decreased in the intervention school from 92% to 88% (p=0.018). The percentage who reported watching movies increased from 61% to 70% in the control school and decreased from 60% to 50% in the intervention school (p=0.004). The percentage who reported using video games increased from 55% to 61% in the control and decreased from 62% to 48% in the intervention school (p=0.001).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Multiple Strategies (Includes parks, playgrounds, trails, recreation centers, and joint-use)-United States						
Cohen, Sehgal (2009) California	Use of a skate park and senior center before and after renovations and predictive factors, like safety, for use ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* 1. Skate park: improvements limited to the skate surfaces. No improvements were made to parking, lighting, or the office facility. 2. Senior center: improvements made to the entrance, courtyard areas, and gymnasium to make it suited for physical activity with exercise equipment.	***DESIGN:*** Before and after study ***DURATION:*** 3 years ***SAMPLE SIZE:*** 4 Parks; intervention and comparison skate park and intervention and comparison senior center ***PRIMARY OUTCOMES:*** Physical activity (PA) and use of resources (e.g., skate park) ***MEASURES:*** 1. System for Observing Parks and Recreation in Communities [SOPARC] (number of users, access to places for physical activity) 2. Interviews (location of the intersection closest to participants residence, sociodemographic data) 3. Mapping of Parks (location, size, and boundaries of "target areas" [e.g. skate pools, jumps and gymnasiums, lawn spaces]) 4. Geographic Information Systems [ArcGIS] data (possible addresses within buffers of each park) 5. 2000 US Census data (residential sociodemographic data) ***DATA COLLECTION:*** Trained bilingual assessors completed systematic observations in the 4 parks using SOPARC during 2 different data collection periods lasting 7 days. The initial series of observations were made prior to any reconstruction. Follow-up observations were made during the same month as the initial observations, 1 and 3 months after the skate park and the senior center reopened, respectively. All parks were observed at 4 different times on each observation day. For the walking paths around the senior centers, the authors established a specified coding station at which data collectors coded the characteristics of each person who passed that location to reduce the possibility of counting a person more than once. Face-to-face interviews were conducted in English or Spanish with households at addresses within each stratum of a determined buffer around each park (within 0.25 miles, 0.25 and 0.5 miles, 0.5-1-miles, and 1-2 miles); 20 were selected in each stratum using ArcGIS. ***LIMITATIONS:*** The target sample was widespread; variation in park use was not recorded; the sample was limited to 4 parks; social and programming factors are critical factors of facility use and physical activity that were not tracked prospectively	14-18 year olds and the elderly (target sample) 11.6 % poverty 32% Hispanic 53.1% non-Hispanic White 2.3% African-American (intervention skate park neighborhood) 8.4% poverty 21.4% Hispanic 61.9% non-Hispanic White 5.3% African American (comparison skate park neighborhood) The comparison skate park was located within a large recreation facility. ***ELIGIBILITY:*** Not reported ***EXPOSURE/ PARTICIPATION:*** An estimated 165,394 people reside in neighborhoods within a 1 mile radius of all 4 parks evaluated.	***LEAD AGENCY:*** Public resources from the city of Los Angeles were secured to renovate the 2 intervention parks, the researchers analyzing the changes were from RAND Corporation and San Diego State University. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not reported ***ADOPTION:*** Not reported ***IMPLEMENTATION:*** $3.5 million was spent to expand a skate park and $3.3 million was invested to renovate a senior center in Los Angeles. Both facilities were closed for 2 years during renovation. ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** 1. Labor and materials for renovations of skate surfaces, senior courtyards, entrances, walking paths, and gymnasiums 2. Exercise equipment and weights 3. Personnel labor costs for extended hours at the senior center ***FUNDING:*** National Institute of Environmental Health Sciences ***STRATEGIES:*** Not reported	***PHYSICAL ACTIVITY:*** 1. After renovations the intervention skate park had increased intensity of activity (from about 55% of the time to about 62%) compared to the comparison park (from about 65% of the time to 50%). 2. In the intervention skate park, more vigorous activity was observed at follow-up (from about 35% of the time to about 40%), whereas in the comparison more sedentary behavior was observed (from about 33% of the time to about 28%). ***USE OF RESOURCES:*** 3. Use of both the comparison and intervention skate parks increased, but the increase was dramatically higher in the intervention skate park ($p<0.001$), which had six times as many users from baseline, an increase of 510% vs. a 77% increase in the comparison park. 4. The number of users at the senior center was significantly lower after renovation than at baseline (478 vs. 198). For the comparison center use did not statistically change (765 vs. 747). 5. The number of seniors observed using the walking paths also decreased from baseline to follow-up, from 97 to 28 in the renovated center ($p<0.01$) and from 70 to 36 in the comparison park (not significant). ***OTHER:*** 6. At baseline, most respondents reported the park areas were safe or very safe. At follow-up the percentage of people who thought the park areas were very safe (as opposed to safe) nearly doubled for the parks with senior centers, increased by 72% for the renovated skate park, and increased four-fold for the comparison skate park ($p<0.0001$). 7. At the renovated skate park, hours of operation increased and one more class was added to the weekend schedule. Staff members were added which provided 3 per shift and increased the staff to child ratio during the camp offered in the summer to 1:7. 8. The renovated senior center had a new director. Hours of operation increased slightly from baseline but the amount of time scheduled for senior programming decreased from 30.8 to 16.5 hours. A monthly fee was also added ($10 for the machines, $15 for using both the machines and weights).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Catlin, Simoes (2003) Missouri	Access to facilities for physical activity (indoor and outdoor, trails, parks) ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceived criminal safety 2. Presence and absence of sidewalks and shoulders 3. Perceived traffic safety *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 2370 adults completing the Missouri Cardiovascular Disease Survey ***PRIMARY OUTCOME:*** Overweight/obesity (body mass index) ***MEASURES:*** 1. Missouri Cardiovascular Disease [MCD] Survey (self-reported weight and height [body mass index], community perceptions [perceived criminal safety, traffic safety, pleasantness of neighborhood), community infrastructure [walking/biking trails, parks, public outdoor exercise facilities, public indoor exercise facilities, the availability of fresh fruits and vegetables, sidewalks/shoulders], worksite infrastructure [access to facilities and equipment for physical activity, time for physical activity, and availability of healthy food choices]) ***DATA COLLECTION:*** Participants were interviewed for the Missouri Cardiovascular Disease survey between July 1999 and January 2000. This survey included standardized questions on health status, demographics, and health behaviors from the Behavioral Risk Factor Surveillance Survey [BRFSS] (tobacco-use, fruit and vegetable consumption, exercise/leisure time physical activity). Questions pertaining to demographics, tobacco use, and physical activity from the BRFSS are well established regarding reliability and validity. Items on fruit and vegetable consumption are less reliable. A 4-level neighborhood composite variable was computed for perceived community factors. ***LIMITATIONS:*** Telephone surveys may underestimate low socioeconomic status, overweight, and obese individuals; possible participation bias; self-reported data: cross-sectional data restricts the ability to apply causation	Adults 71% White 27.3% Black 1.8% Other ethnicity 35.2% overweight 23.9% obese 52% Female (sample) Employed participants differed from the total sample in that there was a higher prevalence of men, younger age groups, post-high school education, and current smokers. A disproportionate stratified sampling design was used to randomly select households in the state of Missouri. Minority and low-income zip codes in urban centers were oversampled. ***ELIGIBILITY:*** Participants were required to be 18 years or older and have a working telephone within their home. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from St. Louis University, the Missouri Department of Health, and Senior Services ***THEORY/ FRAMEWORK:*** Ecological framework ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Not reported ***STRATEGIES:*** Not applicable	***OVERWEIGHT/OBESITY:*** 1. The absence of public outdoor exercise facilities was significantly associated with overweight (OR=1.21; 95% CI= 1.00-1.45). 2. Compared with persons who met the recommendation for physical activity, those classified as insufficient, irregular or inactive were increasingly more likely to be overweight (data not shown). 3. Individuals who perceived their neighborhood or community to have 1, 2, or 3 negative characteristics were 14% (95%CI= 0.93-1.4), 23% (95%CI= 0.91-1.66), and 56% (95%CI= 1.06-2.28) more likely to be overweight, respectively, than individuals who perceived their neighborhood to be safe and pleasant. 4. Employed persons with 1 or 2 negative community perceptions were 1.45 times more likely to be overweight (95%CI=1.07-1.96 and 95%CI= 0.92-2.26, respectively). Those with 3 negative perceptions were 2.83 times more likely to be overweight (95%CI= 1.53-5.24). 5. Employed persons reporting the absence of sidewalks and shoulders were 1.74 times more likely to be overweight (95% CI= 1.26-2.40). 6. Persons who were given time to exercise at work were nearly 20% less likely to be overweight (OR=0.83; 95% CI=0.63-1.09).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Brownson, Housemann (2000) Missouri	Availability of places to walk and be physically active, and barriers and enablers for trails and use of trails ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of safety from crime while using the trails 2. Distance from residence to trails *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 1269 individuals (≥ 18 years) from 17 rural communities in 12 counties in southeast Missouri ***PRIMARY OUTCOME:*** Walking behavior ***MEASURES:*** 1. Risk Factor Survey (walking behavior in the past month, frequency and duration of weekly walking, access to and use of walking trails and indoor exercise facilities, behavioral changes in exercise because of trail use, perceptions of safety when using trails, knowledge and awareness of the trails, preferred aspects of the trails, demographic data) ***DATA COLLECTION:*** From April through December 1998, the research team conducted a two-staged, random-digit-dialed set of telephone interviews. The survey was constructed using methods from the Missouri Behavioral Risk Factor Surveillance System [BRFSS], other surveys, and items developed specifically for this project. ***LIMITATIONS:*** Data was self-reported; items other than the physical activity questions on the BRFSS have not been tested for reliability; the information on access to walking trails is general and does not include data on why people who had access did not use the trails; cross-sectional study design	Adults 90.8% Caucasian 7.8% African American 1.4% Other 34.5% Male (evaluation sample) Rural, high rates of poverty, medically underserved, lower educational levels (targeted sample) ***ELIGIBILITY:*** Eight communities were chosen specifically because of the existence of a walking trail in the local area. All communities were part of ongoing community-based interventions (including policy and environment change) ***EXPOSURE/ PARTICIPATION:*** 280,000 residents in 12 counties	***LEAD AGENCY:*** Research team was from the Missouri Department of health, the Prevention Research Center at Saint Louis University, Centers for Disease Control and Prevention, Stanford University, and San Diego State University (evaluation) ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Centers for Disease Control and Prevention (Centers for Research and Demonstration of Health Promotion and Disease Prevention), the Community Prevention Study of the National Institutes of Health Women's Health Initiative, the Cardiovascular Risk Reduction Targeted Health Initiative of the Missouri Department of Health ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Persons who were regular walkers were more likely to have access to indoor exercise facilities (prevalence odds ratio=1.3, 95%CI=1.0-1.7). 2. Persons using longer trails (>0.25 miles) were more likely to report an increase in physical activity (0.25 to 0.50 miles in length: prevalence odds ratio= 2.8, 95%CI=1.1-7.2; >0.50 miles in length: prevalence odds ratio= 13.2, 95%CI= 1.4-124.6). 3. Travel distance to walking trails appeared to have a slight perceived effect on walking. Those travelling 5-10 miles (prevalence odds ratio= 0.8, 95%CI= 0.4-1.9), 11-29 miles (prevalence odds ratio=0.8, 95%CI=0.3-2.1), or >30 miles to a trail (prevalence odds ratio=0.7, 95%CI=0.3-1.8) had a reduced likelihood of increasing their walking. 4. Among persons who had used the trails, 55.2% reported that they had increased their amount of walking since they began using the trail. 5. Women were more than twice as likely (prevalence odds ratio= 2.1, 95%CI=1-4.4) as men to report that they had increased the amount of walking since they began using the trails. 6. Lower-income groups were more likely to have increased walking due to trail use than were higher income persons ($15-35K: prevalence odds ratio= 0.9, 95%CI=0.4-2; ≥ $35K: prevalence odds ratio= 0.4, 95%CI= 0.2-1) 7. African Americans were more likely to have increased walking due to trail use (prevalence odds ratio= 1.9, 95%CI= 0.5-7.7) than were Caucasians. 8. Among persons with access to walking trails, 38.8% had used the trails. 9. Concerns about safety did not appear to be a barrier to use, as 86.9% of trail users felt very safe when using trails.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Scott, Evenson (2007) Arizona, Maryland, Minnesota, South Carolina, California, Louisiana, North Carolina	Availability and access to places to be physically active ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 1367 6th grade girls from six metropolitan areas [participants of Trial of Activity for Adolescent Girls (TAAG)] ***PRIMARY OUTCOME:*** Moderate to vigorous physical activity ***MEASURES:*** 1. Accelerometers (moderate-to-vigorous physical activity [MVPA]) 2. Self-administered student questionnaire (perception of access to neighborhood facilities [e.g., basketball courts], participation in community teams and classes, frequency of family transportation to places to be physically active, demographic data) 3. Geographical Information System [ArcGIS] (geocode of participant residence) 4. Common Core Dataset [CCD], Private School Survey [PSS[, Integrated Postsecondary Education Data System [IPEDS] (location of schools near participant residence) 5. Smart Pages, Info USA (available commercial facilities) 6. Instrument for Direct Observation (presence or absence of facilities at parks and schools within one mile of participants' homes) 7. US Census data (neighborhood socioeconomic index: standardized indicators from neighborhood-level) ***DATA COLLECTION:*** Accelerometers were worn for 6 days during winter and spring of 2003 (4 weekdays, 2 weekend days). Physical activity was quantified in terms of non-school minutes (weekdays after 2pm and weekends) of moderate-to-vigorous physical activity. Data collectors were trained to ensure standardized procedures, scripts, and protocols. Students completed the questionnaire at school in spring of 2003. TAAG staff conducted direct observations on Saturdays between 9am and 5pm in spring of 2003. All facility location data was verified through telephone calls and cross checks with public directories. ***LIMITATIONS:*** Audits and cross-sectional study design do not allow for causal or temporal inferences; study lacked factors that might influence the girls' perceptions of their surroundings; accelerometers cannot properly register water based and horizontal physical activity; not all individual neighborhood facilities available may have been considered	11-13 year old females ***ELIGIBILITY:*** Informed consent was provided ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Six field centers (Universities of Arizona, Maryland, Minnesota, and South Carolina; San Diego State University, and Tulane University), a coordinating center (University of North Carolina, Chapel Hill), project office (National Heart Lung and Blood Institute) ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** National Institutes of Health and Centers for Disease Control and Prevention ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Most objectively measured facilities had no relationship with physical activity; however, each additional basketball court within the first half mile was associated with 3% more non-school MVPA (21 minutes) per week for the average girl ($p<0.10$). Each additional court between a half-mile and a mile of the girls' homes translated to an additional 3% increase (19 minutes) in non-school MVPA per week for the average girl ($p<0.05$). 2. Perceived measures of facilities were associated with greater average non-school MVPA minutes per week including; basketball courts (10% or 68 minutes, $p<0.01$), golf courses (14% or 97 minutes, $p<0.01$), playing fields (10% or 69 minutes, $p<0.01$), running tracks (13% or 94 minutes, $p<0.01$), swimming pools (12% or 86 minutes, $p<0.01$), tennis courts (data not provided), and dance/gymnastics studios (6% or 44 minutes, $p<0.10$). ***PERCEPTIONS OF ACCESS:*** 3. The number of facilities within the first half mile of a participant's home strongly predicted girls' perceptions of accessibility (basketball court: OR=1.30, 95% CI=1.01-1.68, $p<0.05$, golf course: OR=1.95, 95%CI= 1.25-3.05, $p<0.01$, playing field: OR=1.46, 95% CI=1.11-1.92, $p=0.01$; running track: OR=2.10, 95%CI=1.37-3.21, $p=0.01$; skating rink: OR=1.87, 95% CI=1.09-3.20, $p<0.05$, swimming pool: OR=2.05, 95%CI=1.33-3.15, $p<0.01$; tennis court: OR=2.07, 95%CI=1.60-2.69, $p<0.01$). 4. Facilities located within the second half mile of a participant's home predicted whether girls' perceptions of easy access (golf course: OR=1.62, 95% CI= 1.15-2.28, $p<0.01$; playing field: OR=1.44, 95%CI= 1.05-1.98, $p<0.05$; running track: OR=1.43, 95%CI= 1.04-1.95, $p<0.05$; swimming pool: OR=1.48, 95%CI=1.04-2.11, $p<0.05$). 5. Participation in facility-specific community classes or teams (range of odds ratios; from OR=1.59 for playing field to OR=3.71 for martial arts studio, all $p<0.01$) predicted perception of each facility as accessible. 6. The frequency with which family members provided transportation to sites for recreation (range of odds ratios; from OR=1.11 for martial arts studio to OR= 1.37 for playing field, $p<0.01$ for all but martial arts studio; $p<0.10$) strongly predicted the perception of each facility as accessible.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Addy, Wilson (2004); Wilson, Ainsworth (2007) South Carolina	Access to recreational facilities ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Presence or absence of built environment features (e.g., sidewalks), aesthetically pleasing environment *Complex:* 1. Perceptions of social support	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 1,194 residents of 21 census tracts in Sumter County ***PRIMARY OUTCOMES:*** Overweight/obesity, physical activity, and meeting physical activity recommendations ***MEASURES:*** 1. Survey (height and weight [body mass index], physical activity [duration and frequency per week], length of residency, socio-demographic data, perceived supports [sidewalks, public recreation facilities, streetlights, having a pleasant neighborhood for walking, physically active neighbors] and barriers [traffic volume, unattended dogs, crime, perception of neighbors being untrustworthy] of physical activity in the neighborhood; perceived supports [walking/ bike trails, swimming pools, recreation facilities, parks, playgrounds, sports fields, schools, malls, places of worship, waterways] and barriers [crime and safety concerns associated with recreation facilities] of physical activity in the community ***DATA COLLECTION:*** Residents were surveyed by telephone from January to February. For the survey, test-retest reliabilities ranged from 0.42 to 0.74 for neighborhood variables and from 0.28 to 0.56 for community variables. This survey used the 2001 Behavioral Risk Factor Surveillance System [BRFSS] physical activity module and BRFSS BMI self-reported survey items. Participants were categorized according to the Centers for Disease Control and Prevention [CDC]/American College of Sports Medicine recommendations as active (≥30 minutes per day for ≥ 5 days/week; regular walker), insufficiently active (some walking but less than amounts indicated for regular walking or no walking reported; not a regular walker) or inactive. Neighborhood was defined as a 0.5-mile radius (10-min walk) of the respondent's home and community was defined as a 10-mile radius (20-min) of the home. ***LIMITATIONS:*** Study was cross-sectional study; self-reported data; some of the measures used were not validated; generalizability was limited as the survey was conducted during the winter in a predominantly rural, southeastern community with only 1 small metropolitan area	Adults 18-75 years old Sumter County has an approximate population of 108,000. Households were selected from each county census tract to guarantee a balance in racial and geographic distributions however, males and Caucasians were slightly over-represented. ***ELIGIBILITY:*** Informed consent was required for participation. ***EXPOSURE/ PARTICIPATION:*** Not reported	***LEAD AGENCY:*** Researchers were from the University of South Carolina, Arizona State University, the University of Sydney, the Prevention Research Center at the University South Carolina, and the CDC. ***THEORY/ FRAMEWORK:*** Not applicable ***EVIDENCE-BASED:*** Not applicable ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Survey items were developed from a literature review, expert input, and community focus groups conducted with residents for assessing facilitators and barriers to physical activity. ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Cardiovascular Health Branch from the CDC ***STRATEGIES:*** Not applicable	***OVERWEIGHT/OBESITY:*** 1. (N=723) Among participants not meeting recommendations for regular moderate or vigorous physical activity, trusting neighbors (OR=2.19, 95%CI=1.01-4.74, p<0.05), the presence of recreational facilities (OR=2.07, 95%CI=1.13-3.77), and use of walking/biking trails (as opposed to not having trails available, OR=2.14, 95%CI= 1.01-4.52) were associated with approximately twice the odds of being overweight as opposed to obese. 2. (N=679) Among participants who were not regular walkers, using trails (OR=2.72, 95%CI= 1.15-6.42, p<0.05) (as opposed to not having trails available) was associated with 2.7 times the odds of being overweight as opposed to obese in the subpopulation not engaging in regular recreational walking. ***PHYSICAL ACTIVITY:*** 3. Participants who were physically active at recommended levels were 3.6 times more likely to be normal or underweight versus obese (95%CI= 1.98-6.48, p<0.05) and 4.9 times more likely to be overweight versus obese (95%CI= 2.71-8.66, p<0.01) than inactive participants. 4. Participants who were irregularly active were 2.0 times more likely to be normal or underweight versus obese (95%CI=1.16-3.34, p<0.05) and 3.1 times more likely to be overweight versus obese (95%CI=1.84-5.34, p<0.05). Participants who were regular walkers were also 2.2 times more likely to be normal or underweight versus obese (95%CI= 1.29-3.85, p<0.05) than non-walkers. 5. Participants reporting trust in their neighbors were found to be 2.8 times more likely to be regularly active versus inactive (95% CI=1.48-5.44, p<0.05) and were 4.4 times more likely to be irregularly active versus inactive (95% CI= 2.32-8.29, p<0.05). 6. Participants who reported living in a pleasant neighborhood were 1.9 times more likely to be regularly active versus inactive (95% CI=1.08-3.52, p<0.05) and were 2.1 times more likely to be irregularly active versus inactive (95% CI=1.22-3.72, p<0.05). 7. Participants reporting the presence of neighborhood sidewalks were 1.9 times more likely to report engaging in irregular walking versus no walking (95% CI= 1.11-3.11, p<0.05). 8. Participants reporting the use of malls for physical activity were 2 times more likely to report engaging in irregular walking versus no walking (95% CI=1.11-3.77). 9. Participants using trails were 3.1 times more likely to be regularly active versus inactive (95% CI=1.36-6.98) and 2.3 times more likely to be irregularly active versus inactive (95% CI=1.04-5.16, p<0.05).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Kerr, Frank (2007) Georgia	Access to recreation spaces in the neighborhood ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Residential density and land-use mix in the neighborhood 2. Intersection density in the neighborhood *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 3161 youth from the Strategies for Metropolitan Atlanta's Regional Transportation and Air Quality (SMARTRAQ) household travel survey ***PRIMARY OUTCOME:*** Walking behavior ***MEASURES:*** 1. Strategies for Metropolitan Atlanta's Regional Transportation and Air Quality [SMARTRAQ] household travel survey (destinations visited, travel mode and purpose, time of day). This included a structured diary which captured travel data over a 2-day period. 2. Tax assessor's parcel data (land-use density and mixing of uses, street network files) 3. Census data (residential density, mixed-land use, street connectivity) 4. ArcView (network buffer) 5. Computer aided telephone interview [CATI] ***DATA COLLECTION:*** Self-reported travel data were captured in a structured diary for youth between 5 and 18 years of age. A legal guardian filled out diaries for those less than 14 years old. A head of household provided socio-demographic information through use of a CATI protocol. ArcView enabled a one kilometer buffer to be developed for each respondent's place of residence based on street network distances. A combination of county-level Tax Assessors parcel data and census data was used to measure residential density and mixing of land uses, and street network files were used to measure street connectivity based on the number of intersections per square kilometer. Within the land use codes, parks, open spaces, and commercial use were also available. Intersection density and residential density scores were categorized in tertiles. Only the relationship between the highest and lowest tertiles was represented in the results. ***LIMITATIONS:*** Data was self-reported; the study design was cross-sectional, which restricts causal and temporal inferences	5-18 year olds ~33% non-White 50% Male 50% with annual household income >$60,000 ***ELIGIBILITY:*** Participants were required to give informed consent. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from San Diego State University, the University of British Columbia, and Lawrence Frank & Company. SMARTRAQ data was collected by the Georgia Department of Transportation and the Georgia Regional Transportation Authority. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Robert Wood Johnson Foundation Active Living Research program. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Access to recreation space (OR=2.3, 95%CI= 1.7-3.2, p<0.001) and high residential density (OR=2.5, 95%CI=1.6-3.8, p<0.001) appeared to have a stronger association among males than with females (access to recreation: OR=1.7, 95%CI= 1.2-2.4, p<0.001; residential density: OR=2.3, 95%CI=1.5-3.5, p<0.001). 2. All five urban form variables were strongly and significantly related to walking in white participants in the expected direction at the p<0.001 level (intersection density (OR=1.9, 95% CI= 1.4-2.8); residential land use (OR=3.2, 95% CI= 2.2-4.5); mixed land use (OR=1.8, 95% CI= 1.4-2.5); at least 1 commercial land use (OR=2.0, 95% CI= 1.5-2.7); at least 1 recreation/open space land use (OR=2.7, 95% CI= 2.0-3.6), all p<0.001). 3. Only land use mix (OR=1.7; 95% CI= 1.1-2.7; p<0.05) and access to recreation spaces (OR=1.4; 95% CI= 1.0-2.0, p<0.05) were significantly related to walking in non-whites. 4. Residential density, intersection density, and mixed land use were all significantly related to walking in both males and females. The relationship between urban form and walking appeared to be stronger in females for the variables intersection density (OR=1.8, 95%CI= 1.2-2.7, p<0.01), land use mix (OR=2.2, 95%CI= 1.5-3.1, p<0.001), and commercial land use (or=2.1, 95%CI: 1.5-3.1, p<0.001) than males (intersection density: OR=1.5, 95%CI=1.1, p<0.05; land use mix: OR=1.5, 95%CI: 1.1-2.1, p<0.01; commercial land use: OR=1.6, 95%CI= 1.1-2.2, p<0.01). 5. Participants were significantly more likely to walk if they had fewer than 3 cars; 25% as opposed to 8.9% walked at least once over the 2 days. 6. In households with 1 car, only land use mix (OR=2, 95%CI= 1.1-3.5, p<0.05) and commercial land use (OR=2, 95%CI= 1.2-3.6, p<0.05) were significantly related to walking. 7. Participants with more than 2 cars in the household were almost 3 times as likely to walk if they had access to recreation space (95%CI= 1.6-4.2, p<0.001) or lived in an area of high residential density (95%CI=1.6-5.1, p<0.001).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Heinrich, Lee (2008); Heinrich, Lee (2007) Midwest United States	Access to neighborhood places to be physically active ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Neighborhood access and street connectivity 2. Perceptions of neighborhood incivilities and affects on neighborhood safety *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 452 residents in 12 public housing developments ***PRIMARY OUTCOME:*** Overweight/obesity and physical activity ***MEASURES:*** 1. Pathways to Health [PATH] study data. This study collected data using questions from the National Health Interview Survey (physical activity [frequency, intensity], age, gender, education level, and ethnicity). These questions have demonstrated a significant test-retest correlation in ethnic minority samples (r=0.33, p<0.05). Questions regarding physical activity have shown test-retest reliability ranging from 60 to 84% and validity correlations of r=0.5 and r=0.53 with accelerometers. PATH data was also collected through interviews at health fairs (verification of survey data, height, weight). 2. Understanding Neighborhood Determinants of Overweight and Obesity [UNDO-KC] in Kansas City study data. This study collected data using the Physical Activity Resource Assessment [PARA] instrument (type of physical activity resource, number of features used for physical activity, number of visitor amenities, quality of each feature or amenity present, number of incivilities, cost of use), area maps (street connectivity), and windshield surveys (verification of street connectivity). The PARA has shown good inter-rater reliability (ks>0.77). ***DATA COLLECTION:*** Cross-sectional data was compiled from 2 studies Data were linked by geographic area. The PATH study held health fairs at 12 public housing developments in a large metropolitan area for all adult residents between October 2001 and May 2003. Each health fair participant completed a questionnaire. Trained PATH team members interviewed participants to verify questionnaire data and completeness and conduct height and weight measurements. Body mass index [BMI] was calculated. The UNDO-KC study measured characteristics of neighborhoods surrounding PATH housing development locations using the PARA instrument between February 2003 and May 2004. Neighborhoods were designated as an 800 meter radius circle area around the center of each development. Staff members counted the number of three-street intersections in each neighborhood. ***LIMITATIONS:*** Self-selection and low participation rates; individual variation was not considered; individual and environmental data were not collected during the same time-frame; cross-sectional design restricts causal and temporal outcomes	Adults 18-93 years old 100% Lower income Housing developments served 2523 residents. All participants met the 2004 US Department of Health and Human Service's poverty guidelines [i.e., annual household income of <or=$18,850 per year for a family of four].) 79.6% African-American, 10.0% Caucasian, 3.3% Hispanic, 0.2%, Asian, 6.9% Other. One housing development had only 38.2% African-American (sample) ***ELIGIBILITY:*** Not reported ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from the University of Hawaii at Manoa, the University of Houston, Kansas City University, Castleton State College, American River College, University of Missouri-Kansas City, and the University of Minnesota. ***THEORY/ FRAMEWORK:*** Ecological framework ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** National Institute of Diabetes and Digestive and Kidney Diseases ***STRATEGIES:*** Not applicable	***OVERWEIGHT/OBESITY:*** 1. At the aggregated neighborhood level (n=12), 71% of the variance in obesity prevalence was accounted for by accessibility (beta=-1.02, p=0.05), average feature quality (beta=1.05, p=0.09), average number of amenities per resource (beta=-1.19, p=0.03), and average incivilities per resource (beta=0.70, p=0.04), (F(4,11) 4.32, p<0.05). 2. Male gender and increased quality of features (F(11,407)37.19 and 12.66, p<0.001) predicted lower BMI among residents. 3. A statistically significant relationship was found between both the number of amenities per resource and obesity prevalence (r=-0.61, p=0.04) and amenity quality and obesity prevalence (r=-0.60, p=0.04). 4. As resource accessibility increased obesity prevalence decreased (r=-0.51, p=0.09). 5. Neighborhoods with greater connectivity had residents with lower average BMI (r=-0.58, p=0.05). ***PHYSICAL ACTIVITY:*** 6. A greater percent of accessible physical activity resources (β=0.584, p=0.046) was related to the number of days vigorous physical activity was performed during the past week [F=5.17 (2,11); p<0.05; R^2=0.34]. 7. Greater neighborhood street connectivity (β=0.672, p=0.001) and fewer average incivilities per neighborhood (β=-0.54, p=0.005) were associated with more days walked per week [F=21.8 (2,11); p<0.001; R^2=0.83]. 8. Higher street connectivity (β=0.902, p=0.001) and fewer physical resources were correlated with meeting moderate physical activity guidelines [F=39.18 (2,11); p<0.001; R^2=0.90). 9. Females walked half as many days per week as males did (OR=0.623, 95%CI= 0.428-0.905, p=0.013), while greater street connectivity resulted in 1-2 more days walked per week (OR=1.553, 95%CI=1.105-2.183, p-0.011). 10. Females were up to one-third less likely to meet moderated physical activity guidelines than were males (OR=0.602, 95%CI=0.37-0.978, p=0.41), while having greater street connectivity was linked to a 1.2 to 3.3 greater chance of meeting moderate physical activity guidelines (OR=1.987, 95%CI= 1.21-3.263, p=0.007).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Erwin, Woods (2007) Midwestern County	Access to physical activity opportunities in the neighborhood and school ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 47 participants in 16 school districts and almost 40 elementary schools. ***PRIMARY OUTCOME:*** Overweight/obesity and physical activity (PA) ***MEASURES:*** 1. Questionnaire (demographic information, street address, access to physical activity opportunities in the home, neighborhood, school and convenient facilities, type of neighborhood [residential, mixed, commercial], time spent engaging in videogames/electronic usage) 2. Three-day physical activity recall (physical activity) 3. Five Fitness-gram (evaluating cardiovascular endurance, muscular endurance, muscular strength, flexibility, and body composition) 4. South Carolina Physical Education Assessment Program (rubrics for basketball, paddles, and throwing) ***DATA COLLECTION:*** Participant information used for this study was collected from Year 4 of the summer physical activity program. During the summer program, each participant completed a questionnaire, a checklist, and some fitness tests. Researchers were available to answer questions from the participants to ensure understanding. To confirm the psychometric quality of the questionnaire, a pilot study (N=63) utilizing a test-retest strategy was done (ICC= 0.89 and Cronbach alpha = 0.72). ***LIMITATIONS:*** Small sample size; no follow-ups conducted; even though multiple use data was recorded no frequency of use information was collected	6-13 year olds 70% Male 64% Caucasian 36% Minority: 13% Asian, 13% African-American, 4% Hispanic, and 6% Other (evaluation sample) ***ELIGIBILITY:*** Parents and children provided informed consent. Eligible participants were enrolled in the summer physical activity program ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from the University of Kentucky and the University of Illinois. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Not reported ***STRATEGIES:*** Not applicable	***OVERWEIGHT/OBESITY:*** 1. Higher BMI was significantly correlated with convenient facilities (r=.36, p<.01), and BMI tended to be higher if a participant reported access to more physical activity supports overall. ***PHYSICAL ACTIVITY:*** 2. Children who had access to more physical activity supports in their neighborhood performed significantly fewer push-ups (r=-.43, p<.01) and completed fewer laps (r= -.43, p<0.01). 3. Basketball performance was significantly correlated with overall access (r=0.37, p<0.01) and school access (r=0.40, p<0.01). 4. Basketball motor skills were negatively associated with neighborhood access, as was throwing (r=-0.40, p<0.01).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Kligerman, Sallis (2007) California	Access to parks and recreational facilities ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Land-use mix, residential density, retail floor area ratio, and number of schools 2. Intersection density *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 98 adolescents from San Diego County. These individuals came from a larger cohort study that used participant data from preschools throughout San Diego County, California conducted in the mid-1980s (at age 4). These children were followed periodically until the final measurements at a mean age of 16.2 years. ***PRIMARY OUTCOME:*** Moderate to vigorous physical activity and overweight/obesity ***MEASURES:*** 1. Height and weight (body mass index [BMI]) 2. Accelerometers (physical activity) 3. ArcView Geographic Information Systems [GIS] (land-use patterns, buffered areas around participant's residence) 4. Walkability index (land-use mix, retail, intersection, and residential density) ***DATA COLLECTION:*** Data was collected from children until they were 16.2 years (mean age). Accelerometry data was taken for at least four of the seven days the device was worn. Anthropometric data was calculated for each participant. Environmental variables were created using GIS. Three buffer sizes were used for each participant's home 0.25 mile, 0.5 mile, and 1 mile. Land-use mix, net residential and intersection density, retail floor area ratio, number of schools, number of parks, acres of parks, number of private recreation facilities, nearest park, nearest private recreation facility, and nearest beach were all assessed through GIS. A walkability index was created using measures from four of the built environment variables; land-use mix, retail floor area ratio/retail density, intersection density, and residential density. Telephone books were used to identify private recreation facilities. ***LIMITATIONS:*** The small sample size and large attrition from cohort data limit generalizability; this study was restricted by age range and geographic area; GIS was not used initially thus environmental attributes may have changed and altered behavior without having been documented; location of participant physical activity was not recorded; there may have been self-selection bias because the study was cross-sectional; proximity to recreation facilities is too limited an evaluation and it is necessary to assess characteristics such as fees and quality of parks, walking trails, and recreation centers	14-18 year olds (mean age 16.2 years) 61.2% Mexican-American ***ELIGIBILITY:*** Not reported ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from San Diego State University, the University of British Columbia, and the University of California-San Diego. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Not reported ***STRATEGIES:*** Not applicable	***OVERWEIGHT/OBESITY:*** 1. All correlations between environmental variables and BMI were low and non-significant (data not shown). ***PHYSICAL ACTIVITY:*** 2. Land-use mix ($r=0.285$, $p<0.004$) and the walkability index ($r=0.168$, $p<0.098$) for the 0.5-mile buffer were the only measures to yield significant or marginal bivariate correlations with moderate-to-vigorous physical activity. 3. None of the recreation facilities variables were related to moderate-to-vigorous physical activity (data not shown). 4. In a linear regression, the walkability index was related to minutes of moderate to vigorous physical activity within 0.5 mile of homes, explaining approximately 4% of variance.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Dunton, Jamner (2003) Location not reported	Perceptions of community access to exercise facilities ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 87 adolescent girls and 47 parents ***PRIMARY OUTCOMES:*** Physical activity and cardiovascular fitness ***MEASURES:*** 1. Modified Home and Community scales of the Perceived Environments Related to Physical Activity instrument (perceived availability of home exercise items [e.g., treadmill, bicycle, trampoline] and community exercise facilities [e.g., gym, public park, biking trails], variety and frequency of home items and community facilities used in the past 30 days, location of facility within the community [destination within "10-minute drive"]) 2. Cardiovascular fitness and Vmax metabolic cart (peak oxygen consumption [VO^2peak]) 3. 2-day Physical Activity Recall [2DPAR] (activities for the previous 2 days) 4. Stanford Usual Physical Activity Scale (usual participation in lifestyle activities [e.g., taking the stairs]) 5. Questionnaire (demographics) ***DATA COLLECTION:*** Participants completed the Perceived Environments Related to Physical Activity questionnaire. In a subsample, the instrument demonstrated a test-retest reliability of 0.73 for perceived availability of home items and 0.69 for perceived availability of community facilities. Measurements of VO^2 peak were obtained in milliliters per minute per kilogram of body weight through a ramp-type progressive exercise test on an electronically braked cycle ergometer using a method designed for children and adolescents. Using the 2DPAR, participants recorded all activities for the previous 2 days between 7am and 11 pm, segmented into 30-minute intervals. Activities that best described each half hour were chosen from a list of predetermined list of activities. The self-reported physical activity levels, lifestyle activities, and objectively measured cardiovascular fitness were evaluated at a clinical research testing facility. Parents of 47 participants were used to validate adolescent reports. The Stanford Usual Physical Activity Scale has been demonstrated as reliable and valid in previous studies. ***LIMITATIONS:*** Self-reported data was subject to biases; unmeasured variables that may have shaped physical activity participation were not accounted; the sample had a fairly homogenous environment; the sample sizes were small	Female 14-17 years Mean age 15.02 ± 0.72 years 48% Caucasian 27% Hispanic/Latino 14% Asian 1% African-American 10% Other/mixed ethnicity (evaluation sample) Girls and their parents did not agree on the number of exercise items in their home ($r=0.62$, $p<0.001$). The number of community facilities reported by adolescents was unrelated to the number reported by their parents ($r=0.14$, $p>0.05$). ***ELIGIBILITY:*** Individuals failing to meet the Centers for Disease Control and Prevention/American College of Sports Medicine minimum physical activity recommendations, performing at or below 75th percentile of cardiovascular fitness for their age, and those without health problems preventing physical activity participation were eligible to participate. Parent respondents were required to live with their daughters. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from the University of California, Irvine. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** National Institute of Child Health and Development and from the National Institute of Health ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. As the number of home items (inter-correlation=0.224, $p<0.05$) and community facilities (inter-correlation=0.266, $p<0.05$) perceived by adolescents increased, so did adolescent cardiovascular fitness. 2. The variety of home equipment use was positively related with vigorous activity (inter-correlation=0.34, $p<0.01$) and lifestyle activities (inter-correlation=0.242, $p<0.05$) as was the frequency of home equipment use (vigorous activity: inter-correlation=0.276, $p<0.05$; lifestyle activities: inter-correlation=0.262, $p<0.05$). 3. Adolescents' perceptions of resource availability in both the home and community domains were positively associated with VO^2 peak ($p<0.05$) but unrelated to vigorous physical activity (VIG), kilocalories (KCAL), and lifestyle activities (LA).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Pate, Colabianchi (2008) South Carolina	Availability of neighborhood physical activity resources including colleges and universities, schools, churches, parks, and commercial facilities ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 1,234 twelfth-grade girls from 19 schools ***PRIMARY OUTCOMES:*** Physical activity (PA), vigorous-physical activity (VPA), moderate-to-vigorous physical activity [MVPA] ***MEASURES:*** 1. Height and weight (body mass index [BMI]) 2. 3-Day Physical Activity Recall [3DPAR] (frequency and type of physical activity) [valid] 3. Geographical Information System [GIS] data (number and type of physical activity facilities near residence) 4. Survey (socioeconomic status, age, race, address, and parent education) 5. Internet search engines, Internet Yellow Pages, data from the South Carolina Department of Education, the South Carolina state parks website, surveys of and interviews with park directors, and handheld Global Positioning Systems [GPS] units (confirmation of facility addresses) 6. US Census records (household income for area of residence) ***DATA COLLECTION:*** Data were collected in 2002–2003 during the spring semester as part of a larger physical activity intervention and analyzed in 2006–2007. Participants recalled their activities on Tuesday, Monday, and Sunday, and completed a grid for each day using a 3-Day Recall for Physical Activity. The grid was divided into 30-minute time blocks, beginning at 7:00 am and ending at 12 pm. Metabolic equivalent task [MET] values were obtained from the Compendium of Physical Activities. Data were reduced to summary variables: number of 30-minute blocks of vigorous physical activity (VPA, ≥6 METs) per day, number of 30-minute blocks of moderate-to-vigorous physical activity (MVPA, ≥3 METs) per day, and total METs per day. The addresses of physical activity facilities within a 0.75-mile street-network buffer around each girl's home in those counties, including colleges and universities, schools, churches, parks, and commercial facilities were collected through a variety of methods and geo-coded to establish available facilities in each individual's area. ***LIMITATIONS:*** Some data was self-reported; study population was not randomly selected; study included only adolescent girls, so assumptions cannot be made about boys or other age groups	17.7 ± 0.6 years of age 56% African American Median household income $40,531 ± 15,175 (evaluation sample) ***ELIGIBILITY:*** Girls aged 18 and older provided written informed consent. For girls aged <18, a parent or guardian provided informed consent and the girl gave assent to participate. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from the University of South Carolina ***THEORY/ FRAMEWORK:*** Social-ecologic model of health behavior and Social Cognitive Theory ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** The National Heart, Lung, and Blood Institute ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. The number of colleges was significantly associated with total METs (beta= 5.7, SE=2.3, p=0.02). 2. The number of parks (beta=0.071, SE=0.03, p=0.04) and the number of churches (beta=0.04, SE=0.02, p=0.04) were associated with the number of reported 30-minute blocks of VPA in the model. 3. The number of individual (beta=0.090, SE=0.04, p=0.01), multi-purpose (beta=0.201, SE=0.07, p=0.01), and total number of commercial facilities (beta=0.10, SE=0.03, p<0.01) was significantly related to the number of reported 30-minute blocks of VPA. 4. The commercial facilities variable was significantly associated with the number of blocks of VPA (beta=0.09, SE=0.04, p=0.02). 5. For white girls there was an increase in total METs with an increase in the number of parks. The interaction of parks with race was significantly associated with total METs (beta=3.34, SE=1.26, p=0.01).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Jilcott, Evenson, (2007) North Carolina	Proximity to physical activity resources use (e.g., cost) and locations including public parks, gyms and recreation centers, and public schools ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. School siting and distance to parks *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 199 under-insured women from three southeastern North Carolina counties (New Hanover, Brunswick, and Pender) in one community health center in Wilmington, North Carolina. (147 urban participants and 52 rural participants) ***PRIMARY OUTCOMES:*** Physical activity [PA] and moderate to vigorous physical activity [MVPA ***MEASURES:*** 1. Height and weight (body mass index [BMI]) 2. Geographical Information System [n=199] [GIS] data (participant address, locations of parks, gyms, recreation centers, and public schools open for public use, distance from home to activity resources) 3. Survey [n=180] (perceived proximity to physical activity resources) 4. ActiGraph Accelerometer [n=184] (physical activity) 5. Baseline Questionnaire (age, self-reported birth date, education, household income, race, smoking status) 6. Internet search/County Parks and Recreation Department/New Hanover County Department of Aging (physical activity facility address information) ***DATA COLLECTION:*** This study used data from a randomized trial called WISEWOMAN, conducted from May 2003 through December 2004. Buffers, 1- and 2-mile, surrounding participants' homes were created using GIS. The number of each type of PA resource in the 1- and 2-mile Euclidean ("as the crow flies") buffers was calculated using the Network Analyst intersect tool. Participants were instructed to wear the accelerometer for 7 consecutive days during all waking hours. The minimum criterion for days worn was 4 days, with a minimum of 6 valid hours to complete a valid day. All perceived proximity and accelerometer data were collected at participants' 12-month follow-up visits. ***LIMITATIONS:*** Causal inferences cannot be made using cross-sectional data; questionnaire data was self-reported	Adult Females ***ELIGIBILITY:*** Uninsured, midlife women that were participants of the North Carolina WISEWOMAN program. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from the University of North Carolina at Chapel Hill. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Center for Disease Control and Prevention and the University of North Carolina Health Promotion Disease Prevention Nutrition Activities Trust Fund ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. No statistically significant relationships were found between activity and perceived or objectively measured proximity to parks. 2. There was a statistically significant association between the number of schools within the 1-mile buffer and minutes of MVPA (objective model: n=155, adjusted standardized parameter estimate= -0.16, p=0.04, adjusted R^2=0.11; objective and perceived model: n=155, adjusted standardized parameter estimate = -0.17, p=0.03, adjusted R^2=0.10). For example, if examining two women with the same age (53 years) and BMI (31 kg/m2), the woman with no school within her 1-mile buffer averaged 105.3 minutes of MVPA per day while the other woman with two schools within her 1-mile buffer averaged 83.2 minutes of MVPA per day (p=0.04). 3. There was no association between distance to resources identified through qualitative interviews and MVPA minutes, adjusting for age and BMI (standardized parameter estimate for GIS network distance = 0.06, p= 0.45). 4. Women who wore the accelerometer all 7 days had a lower average BMI than women who wore it 4 to 6 days (p = 0.006, data not shown). 5. The association between number of schools within the 1-mile buffer and MVPA minutes was stronger and statistically significant for women who wore the accelerometer for 7 days (adjusted standardized parameter estimate = –0.38, p≤ 0.01, n = 44) compared with women who wore it 4 to 6 days (standardized parameter estimate = –0.08, p = 0.36, n = 111).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Huston, Evenson (2003) North Carolina	Access to places to be physical active (indoor and outdoor) ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Presence of streetlights *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 1796 adult residents from six counties in North Carolina (Cabarrus, Henderson, Pitt, Robeson, Surry, Wake) ***PRIMARY OUTCOMES:*** Physical activity [PA] and meeting recommendations for leisure activity ***MEASURES:*** 1. North Carolina CVH survey (neighborhood characteristics [sidewalks, trails, streetlights, unattended dogs, and safety from crime], general access to places for physical activity and location [indoor, outdoor]) 2. 2001 Behavioral Risk Factor Surveillance Survey [BRFSS] items (exercise module [type, duration, intensity, and frequency of the two leisure-time physical activities most commonly performed during the past month] and demographic module [age, race, sex, annual household income, education]) ***DATA COLLECTION:*** Data from the present study came from the results of the North Carolina Six-county Cardiovascular Health [NC-CVH] survey. NC-CVH used the BRFSS calling protocol; up to 15 call attempts for each sampled phone number, distributed across weekday, weeknight, and weekend attempts. Interviews were conducted for all counties simultaneously from June to November 2000. Only one randomly selected adult from each household was surveyed. Items from 2 modules of the 2001 BRFSS were combined with general access (ICC=0.48-0.92) and neighborhood characteristic questions (k=0.60-0.84), developed through previous research, to create the NC-CVH survey. ***LIMITATIONS:*** Cross-sectional survey; self-report data; missing data; not all individuals were accessible for interviews	Adults age 18 years and older (sample) Median age= 30.4–42.7 years Median annual family income= $36,900–$71,300) Population density= 134.2–809.7 persons per square mile (County Range) White= 32.8%–92.5%, Black= 3.1%–33.6%; population of one county is 38% American Indian (County Range) ***ELIGIBILITY:*** Participants were adults 18 years or older. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from the University of North Carolina at Chapel Hill and the North Carolina Department of Health and Human Services. (evaluation) ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** The study was supported in part by North Carolina state appropriations for the North Carolina Cardiovascular Health Data Unit and by the Centers for Disease Control and Prevention Cardiovascular Health Program cooperative agreement. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Access to places was associated with any activity (OR=2.23; 95%CI=1.44–3.44; p<0.0001) and recommended activity (OR=2.15; 95%CI=1.23–3.77; p<0.01), and trails were associated with recommended activity (OR=1.51; 95%CI=1.00–2.28; p<0.05). 2. Individuals who reported access to both indoor and outdoor places for physical activity were more likely to engage in any activity and in recommended activity than those who reported no access to places for activity (77.2% vs. 48.9%, p<0.001). 3. Trails and streetlights were positively associated with acquiring recommended amounts of leisure activity before adjusting but became insignificant after controlling for all confounding variables.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
McNeill, Wyrwich (2006) Missouri	Access to places to be physically active ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Availability of physical activity facilities *Complex:* 1. Social support	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 910 patients from two public health centers in the St. Louis, Missouri area ***PRIMARY OUTCOME:*** Moderate and vigorous physical activity ***MEASURES:*** 1. Behavioral Risk Factor Surveillance System Survey [BRFSS] data (frequency, duration, and type of physical activity) 2. Neighborhood Quality and Access to Facilities (perceptions of criminal activity, traffic, pleasantness, and access to walking/biking trails, parks, and places to be physically active) 3. Questionnaire (self-efficacy, motivation for physical activity, social support for physical activity, socio-demographic data) ***DATA COLLECTION:*** This study used baseline data from a 3-year randomized trial funded by the Centers for Disease Control and Prevention completed in 2003. Participants were recruited over 3 months in spring 2002. The trial "Optimal Segmentation Strategies in Health Communication," evaluated the effectiveness of 3 different targeted magazines on physical activity. At both health centers, individuals were approached by trained graduate assistants, given a description of the project, and offered the opportunity to participate. The baseline survey was self-administered. Cronbach's alpha for self-efficacy questions ranged from 0.52 to 0.92. Social support was measured using items from previously developed scales (Sallis et al., 1987; Eyeler et al., 1999) for use with racially/ethnically diverse populations item ranging from $\alpha = 0.71$ to 0.77. Participants' perceptions of their environment were measured using a 7-item measure developed by Brownson et al., (1999) items ranging from, $\alpha = 0.68$ to 0.79. ***LIMITATIONS:*** The cross-sectional study design does not allow causal inferences to be made; data from the surveys was self-reported.	Adults, mean age 33 ± 13.1 years old 43.2% African American, lower and middle-income, 67% Female (evaluation sample) ***ELIGIBILITY:*** Eligible participants were 18 to 65 years of age, African American or White, had daily access to a working telephone, and were able to read materials written at the fifth-grade level. Additionally participants for the trial were eligible if they were "healthy adults" with a routine appointment the health center or they were accompanying someone else with an appointment. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from Harvard and Saint Louis University. ***THEORY/ FRAMEWORK:*** Theories of Health Behavior demonstrating a relationship between these factors and physical activity. ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** This research was supported by a grant from the Centers for Disease Control and Prevention, and the CDC/ ASPH Minority Fellowship Program. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. When assessing the direct relationship between the physical environment and walking behaviors, availability of physical activity facilities was associated with more walking ($\beta = 0.269$, $t = 6.74$, $p<0.05$), but neighborhood quality was not. 2. Both neighborhood quality and availability were directly associated with moderate-intensity physical activity (neighborhood quality, $\beta = 0.135$, $t = 2.57$; availability, $\beta= 0.137$, $t=3.42$), though this effect is marginal ($p<0.05$). 3. Neighborhood quality was the only physical environmental correlate associated with vigorous-intensity activity ($\beta = 0.104$, $t = 2.52$, $p<0.05$). 4. All paths between emotional support and social pressure ($\beta=0.382$, $t=6.52$), peer acceptance ($\beta=0.350$, $t=6.32$), and intrinsic motivation ($\beta=0.492$, $t=10.71$) were positive and statistically significant. 5. The association between social support and self-efficacy was not statistically significant.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Powell, Martin (2003) Georgia	Proximity to convenient places for walking and physical activity ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 4532 adults ***PRIMARY OUTCOME:*** Meeting physical activity recommendations ***MEASURES:*** 1. 2001 Georgia Behavioral Risk Factor Surveillance System [BRFSS] data (frequency, duration, and intensity of physical activity, safe and convenient places to walk [e.g., trails, parks], distance to places for walking, perceptions of safe places to walk) ***DATA COLLECTION:*** Data were collected via the Georgia BRFSS, a random-digit-dialed telephone survey. The questionnaire was administered in 2001. Questions about safe and convenient places to walk were added specifically to the Georgia BRFSS. The questions asked were simple, have construct validity, and based on their association with self-reported behaviors, have predictive validity. Respondents were categorized as meeting current recommendations for activity or not. Three categories of convenience were developed: less than 10 minutes walking, less than 10 minutes not walking, and 10 minutes or greater regardless of mode. ***LIMITATIONS:*** Self-reported data; cross-sectional study design	Adults ***ELIGIBILITY:*** Not reported ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from the Georgia Department of Human Resources. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Research was funded by a Cooperative Agreement from the Centers for Disease Control and Prevention. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. The most commonly reported places for walking were neighborhood streets or sidewalks (32%; 95%CI=30.2%, 33.8%), followed by public parks (26.8%; 95%CI=25%, 28.6%), school tracks (10.2%; 95%CI=9.1%, 11.4%), gyms or fitness centers (7.8%; 95%CI=6.6%, 9%), walking or jogging trails (6.6%; 95%CI=5.7%, 7.6%), treadmills at home (4.1%; 95%CI=3.3%, 4.9), or shopping malls (2.9%; 95%CI=2.2%, 3.5%). 2. If individuals whose place to walk was their neighborhood or treadmill at home were omitted, then 49.7% (95%CI=47.2%, 52.3%) reported that they could reach their walking place in less than 10 minutes, while 75.9% (95%CI=73.6%, 78.1%) reported that they would drive there, and 22.4% (95%CI=20.2%, 24.6%) reported that they would walk. 3. Including persons whose place to walk was their neighborhood or home treadmill, 47.1% (95%CI=45.1%, 49.1%) of persons could walk to their place in less than 10 minutes. Fewer than 15% of the persons whose place was a public park, school track, gym or fitness center, or shopping mall could walk to their place in less than 10 minutes. 4. Persons reporting a place to walk were significantly more likely to meet current recommendations for regular physical activity (41.5%, 95% CI=39.4%, 43.6%) than were those reporting no place to walk (27.4%; 95% CI= 21.2%, 33.7%). 5. There was a positive significant relationship between places to walk and meeting current activity recommendations (some place to walk: 43% <10 min that participants walk to, 42.5% <10 minutes but participants do not walk to it, 38.1% ≥10 min that participants walk or drive to, p=0.04 for trend; not home based place to walk: 49.4% <10 minute that participants walk to, 42.5% <10 min but participants do not walk to it, ≥10 min away that participants walk or drive to, p=0.005). The same direct pattern was seen for other specified places, but the trend was not significant. 6. An estimated 91.8% (95%CI=90.8%, 92.8%) of Georgians had a place where they would feel safe walking for exercise or recreation. (Note: p-values not reported)

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Hoehner, Brennan (2005) Missouri and Georgia	Access to recreational areas ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Land-use mix, access to locations, and neighborhood features 2. Presence or absence of sidewalks 3. Access to public transportation 4. Presence of neighborhood physical disorder *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 1053 adults (Savannah [n=600] and St Louis [n=473]) in 1158 street segments ***PRIMARY OUTCOMES:*** Transportation activity and meeting physical activity recommendations ***MEASURES:*** 1. ArcView Geographic Information [GIS] (street segment attributes [sums, counts, frequencies, means, buffers]) 2. Global Positioning System (street location, attribute data, neighborhood features [walking trails]) 3. Audit (data on each street segment). Audits were constructed from a review of >30 existing tools. 4. Telephone survey with modified International Physical Activity Questionnaire [IPAQ] (perceived environmental measures, access to recreational facilities, presence/ absence of facilities, minutes walked, land-use). 5. 2000 US Census/Topographically Integrated Geographic Encoding and Reference System [TIGER] line road files (tract data, line segment data) ***DATA COLLECTION:*** From February to June 2003 telephone survey data was collected. Most questions used Likert- or ordinal-type response categories. Audits were conducted during daylight hours from March to May 2003. Physical and social environmental variables were chosen from an expert consensus development process carried out between October 2001 and June 2002 to be measured in parallel by the telephone survey and audit. Cut-points for objective environmental measures were based on quartiles. Respondents were geo-coded onto Census TIGER/line road files. Mapping survey respondents (as points) and the environmental audit data (as vectors) with GIS software provided a linkage between survey and audit data. The IPAQ has test-retest coefficient of ~0.80 and examines 7 days of PA over 4 domains: occupation, transportation, house/yard, and recreation/leisure. *(continued next page)*	Adults 18 to 96 years old 63.6% White, 32.6% Black, 3.8% Other minority (sample) The sample was diverse with respect to age, ethnicity, and educational attainment, and slightly under-represented men. ***ELIGIBILITY:*** Adults were eligible if their residence could be geocoded and they were physically able to perform tasks. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from the Saint Louis University Prevention Research Center, and the University of California at Davis. ***THEORY/ FRAMEWORK:*** Not applicable ***EVIDENCE-BASED:*** Not applicable ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Robert Wood Johnson Foundation and the Centers for Disease Control and Prevention ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. People in the highest quartile for the total number of nonresidential destinations were two to three times more likely to engage in any transportation activity (OR=3.5, 95%CI= 2.3-5.5) or meet recommendations (OR=3.3, 95%CI= 2.0-5.4) through transportation activity than respondents in the lowest quartile ($p<0.05$ for trend). 2. Those who agreed that they had many places to exercise in their community and who reported more facilities within a 5-minute walk were slightly more likely to meet recommendations, but the direction of the trends and significance of the associations at different levels of these measures were inconsistent (data not shown). 3. Compared with never using the park in the last 30 days, the odds of meeting recommendations through recreational activity individuals were 1.2 (95%CI= 0.8-1.7) for using it 1 to 5 days; 2.1 (95%CI= 1.3-3.4) for using it 6 to 10 days; and 4.3 (95%CI= 2.9-6.2) for using it >10 days ($p<0.05$ for trend). 4. Compared to never using the nearest trail in the past 30 days, the odds of meeting recommendations through recreational activity were 1.4 (95%CI= 0.97-2.0) for 1 to 5 days; 2.4 (95%CI= 1.4-4.1) for 6 to 10 days; and 3.4(95%CI= 2.2-5.1) for >10 days ($p<0.05$ for trend). For use of the nearest private fitness facility, individuals were 1.3 times more likely (95%CI= 0.8-1.9) for 1 to 5 days; 2.3 times more likely (95%CI= 1.3-4.0) for 6 to 10 days; and 5.3 times more likely (95%CI= 3.3-8.6) for > 10 days ($p<0.05$ for trend) to meet recommendations through recreational activity. 5. Levelness of sidewalks as assessed by the audit showed a significant negative association (OR=0.6, 95%CI= 0.4-0.9) for engaging in any transportation activity and with meeting recommendations (OR=0.5, 95%CI= 0.3-0.8) through transportation activity ($p<0.05$ for trend). 6. Those in the top quartile for street segments of bus stops were 1.5 times more likely to engage in transportation activity (95%CI= 1.0-2.3) and 1.6 times more likely to meet recommendations through transportation activity (95%CI= 0.99-2.6) compared to those in the lowest quartile as assessed by the audit ($p<0.05$ for trend). *(continued next page)*

(Continued from previous study)						
		LIMITATIONS: Audit instrument provided limited variation and was not systematic; not all crime and income variables were taken into account; not all street network characteristics and distances within the fringe area were examined; the IPAQ-long form is long, repetitious, and associated with over-estimation; there may have been measurement error, low statistical power, and/or a limited direct effect related to features measured				7. Those in the highest quartile for segments with minimal garbage, litter, or broken glass were 0.4 times less likely (95%CI= 0.3-0.7) to engage in transportation activity and 0.4 times less likely (95%CI= 0.2-0.7) to meet recommendations through transportation activity than those in the lowest quartile ($p<0.05$ for trend). Similarly, those in the highest quartile of physical disorder were 0.5 (95%CI= 0.3-0.8) and 0.4 (95%CI= 0.2-0.7) times less likely to engage in transportation activity or meet recommendations through transportation activity, respectively ($p<0.05$ for trend). 8. Respondents with >92 active people observed within 400 m of their home (highest quartile) were about two to three times more likely to engage in any (OR=2.1, 95%CI= 1.4-3.2) or recommended levels of activity (OR=2.7, 95%CI= 1.7-4.3) through transportation compared to those with <47 active people.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Frank, Kerr (2007) Georgia	Access to open and recreation spaces ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Land use diversity 2. Street connectivity *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 3161 youth ***PRIMARY OUTCOME:*** Walking behavior ***MEASURES:*** 1. Strategies for Metropolitan Atlanta's Regional Transportation and Air Quality [SMARTRAQ] household travel survey (2-day survey; destinations visited, travel mode and purpose, time of day) 2. ArcView Geographic Information System ([GIS] network buffer) 3. Tax assessor's parcel data (land-use density and mixing of uses, street network files) 4. Census data (land-use density, land-use mix, street network files [street connectivity]) ***DATA COLLECTION:*** Data used for this study was collected in 2001 and 2002 for the SMARTRAQ. ArcView GIS was used to define a 1-kilometer road network buffer to be developed around each respondent's place of residence. Intersection density and household density scores were categorized by tertiles. The lowest tertile was used as the referent. ***LIMITATIONS:*** Cross-sectional study design restricted causal inferences; this study was restricted to one geographic region with low-walkability; walking variables were self-reported; the study did not include measures of the pedestrian environment	5-20 year olds (target sample) 38% Minority 20% Lower income 20% had a household income less than $30,000 ~50% Female (evaluation sample) ***ELIGIBILITY:*** Not reported ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from the University of British Columbia, San Diego State University, and Lawrence Frank & Company. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** This work was supported by the Active Living Research a national program of the Robert Wood Johnson Foundation. Data was based in part from the "Strategies for Metropolitan Atlanta's Regional Transportation and Air Quality" (SMARTRAQ) program funded by the Georgia Department of Transportation Authority, Centers for Disease Control and Prevention, and Environmental Protection Agency. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Living in the top tertiles for residential density (walking ≥ 1 time per 2 days= 2nd tertile; OR= 1.4, CI= 1.0-1.9, p<0.05; 3rd tertile; OR= 2.4, CI= 1.8-3.2, p<0.001; walking ≥0.5 miles/day; 3rd tertile; OR=2.7, CI=1.7-4.4, p<0.001) and street connectivity (3rd tertile; walking ≥ 1 time per 2 days; OR=1.7, CI=1.3-2.2, p<0.001; walking ≥ 0.5 miles/day; OR=1.8, CI= 1.2-2.7, p<0.01) was significantly related to both walking outcomes, specifically when the odds ratio for density was greater for walking 0.5 mile or more. 2. Land-use mix (walking ≥ 1 time per 2 days; OR=1.8, CI= 1.4-2.3, p<0.001; walking ≥ 0.5miles per day; OR=1.9, CI=1.3-2.9, p<0.001), commercial destinations (walking ≥1 time per 2 days; OR=1.8, CI= 1.4-2.3, p<0.001; walking ≥0.5 miles/day; OR=1.8, CI= 1.2-2.7, p<0.01), and recreation destinations (walking ≥1 time per 2 days; OR= 2.1, CI= 1.7-2.6, p<0.001; walking ≥0.5 miles/day; OR=2.1, CI= 1.5-2.9, p<0.001) within 1-km were all significantly related to walking. *Results for only top tertile are shown;* 3. For 5-8 year olds, living near recreation or open space (walking ≥1 time per 2 days; OR=2.1, CI= 1.3-3.4, p<0.001; walking ≥0.5 miles/day; OR=2.4, CI= 1.2-5.1, p<0.05) was significantly related to walking at least once over 2 days as well as walking ≥0.5 miles per day. 4. For 9-11 year olds reporting that they had walked at least once over 2 days, residential density (OR=2.3, CI; 1.2-4.3, p<0.05) and living near recreation or open space (OR=1.8, CI; 1.1-2.9, p<0.05) were significant. None of the variables was significantly related to walking ≥0.5 miles per day for this age group. 5. For 12-15 year olds reporting that they walked at least once over 2 days, number of intersections (OR=1.7, CI= 1.1-2.8, p<0.05), density (OR=3.7, CI= 2.2-6.4, p<0.001), mixed land use (OR=2.5, CI= 1.6-3.8, p<0.001), at least one commercial use (OR=2.6, CI= 1.7-4.0, p<0.001), and at least one recreation/open space (OR=2.5, CI= 1.7-3.6, p<0.001) were significant factors. 6. For 12-15 year olds reporting that they walked ≥0.5 miles/day, number of intersections (OR=2.4, CI= 1.1-5.1, p<0.05), highest density (OR=4.9, CI= 2.1-11.4, p<0.001), mixed land use (OR=2.7, CI= 1.4-5.3, p<0.01), at least one commercial use (OR=2.7, CI= 1.4-5.4, P<0.001), and at least one recreation/open space (OR=2.4, CI= 1.3-4.2, p<0.001) were significant factors. 7. For the 16-20 year olds reporting that they had walked at least once over 2 days, intersection density (OR=2.0, CI= 1.1-3.6, p<0.05), mixed land use (OR=1.9, CI= 1.0-3.2, p<0.05), and recreation land use (OR=1.8, CI= 1.1-2.9, p<0.01) were significant. For those reporting that they had walked ≥ 0.5 miles per day, intersection density (OR=3.1, CI= 1.3-7.4, p<0.01), residential density (OR=3.2, CI= 1.1-9.1, p<0.05), and recreation land use (OR=2.1, CI= 1.1-3.7, p<0.05) were significant factors. 8. Having up to 5 acres of recreation space in a 1-km buffer was significantly related to walking (5-8 years; OR=2.2, CI= 1.2-4.1, p<0.01)(12-15 years; OR=2.2, CI= 1.3-3.7, p<0.01)(16-20 years; OR=2.6, CI= 1.5-4.6, p<0.001), however more than 6 acres of recreation or open space did not appear to be related to walking. 9. In 9-11 year olds, only four or more recreation spaces (OR=2.6, CI= 1.3-5.4, p<0.01) were associated with an increased likelihood of walking, size of park was not related to walking behavior. 10. In the multivariate analyses, having no car, access to recreation and open spaces (walking ≥1 time per 2 days; OR=1.9, CI= 1.3-2.3, p<0.001; walking ≥0.5 miles/day; OR=1.7, CI= 1.2-2.4, p<0.01), and greater residential density (walking ≥1 time per 2 days; OR=1.7, CI= 1.1-2.3, p<0.01; walking ≥0.5 miles/day; OR=1.8, CI= 1.0-3.1, p<0.05) were significantly related to walking. 11. Intersection density, land use mix, commercial land usage, gender, and household size were not significant in the multivariate model.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Wen, Kandula (2007) California	Access to parks and playgrounds in the neighborhood ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of neighborhood and park safety *Complex:* 1. Neighborhood social cohesion	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 41,545 adults ***PRIMARY OUTCOME:*** Meeting walking recommendations ***MEASURES:*** 1. 2003 California Health Interview Survey data (frequency and total duration of walking for transport and leisure in the past week, sociodemographic variables, social cohesion, availability of parks, playgrounds or open spaces near the home, and neighborhood and park safety) 2. Census data (neighborhood-level socioeconomic status) ***DATA COLLECTION:*** The authors used cross-sectional data from the 2003 California Health Interview Survey. The University of California Los Angeles Center for Health Policy Research provided access to the survey data, and the research team from the University of Utah completed secondary analysis on the data. Based on national physical activity recommendations, "walking at recommended levels" was defined as 5 or more sessions of walking (for transportation or leisure) in the previous week totaling at least 150 minutes. ***LIMITATIONS:*** Cross-sectional data limits the ability to make casual inferences; self-reported data; study is based in California and the results are not necessarily generalizable to other locations	18 years and older 63% White, 6.4% Black, 17% Hispanic, 8.6% Asian, 4.4% Other and 13% lower income (evaluation sample) ***ELIGIBILITY:*** Eligible participants for the 2003 California Health Interview Survey were 18 years and older. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from the University of Utah. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** American Cancer Society ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Neighborhood social cohesion (OR=1.09, 95% CI=1.04, 1.14, p<0.001) and access to a park, playground, or open space (OR=1.26, 95% CI=1.16, 1.36, p<0.001) were both significantly associated with walking at recommended levels. 2. Neighborhood safety was not significantly associated with walking at recommended levels in any subgroup analysis. 3. Social cohesion was positively associated with walking at recommended levels among Whites (OR=1.06, 95% CI=1.01, 1.12, p<0.001) and Hispanics (OR=1.14, 95% CI=1.02, 1.27, p<0.05).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Voorhees, Young (2003) Virginia	Access to place for physical activity ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of neighborhood traffic safety 2. Perceptions of neighborhood safety from crime and unattended dogs 3. Distance to neighborhood locations *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 285 respondents in Fairfax and Arlington counties, and the city of Alexandria in Virginia ***PRIMARY OUTCOME:*** Physical activity and meeting physical activity recommendations ***MEASURES:*** 1. Women and Physical Activity Survey (social roles and issues, sense of community, physical activity, sociodemographic data, general health, lack of lighting and sidewalks, neighborhood safety [traffic, dogs, crime], distance to locations, access to places for physical activity) 2. Behavioral Risk Factor Surveillance System [BRFSS] survey items (intensity of physical activity) ***DATA COLLECTION:*** The Women and Physical Activity Survey used for this study was developed through focus groups and collected as part of the Women's Cardiovascular Health Network Project Sites. Participants were interviewed by trained, bilingual, females of a similar age range as the interviewees in April 2002 through September 2002. The BRFSS physical activity measure had an ICC of 0.7 (95% CI= 0.4–0.9). Respondents were categorized as inactive, insufficiently active, and meeting recommendations. Respondents met recommended activity levels if they engaged in moderate activity at least 5 days per week for at least 30 minutes or they engaged in vigorous activity at least 3 days per week for at least 20 minutes. Translation of the English version into Spanish was done by the University of North Carolina (UNC) site. Adaptations were made to account for local variations in language. ***LIMITATIONS:*** Causal inferences cannot be made using cross-sectional data; sample size was small; survey data was self-reported; the sample was a convenient sample	Urban, Female, Hispanic, Adults (target sample) 31.9 years old [mean age], 44.0% Spanish speaking only (evaluation sample) 11.4% Hispanic/ Latino (Fairfax County): 19.5% Hispanic/ Latino (Arlington County): 14.7% Hispanic/ Latino (Alexandria) ***ELIGIBILITY:*** Urban Latina females between the ages of 20 and 50 years were eligible. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from the University of Maryland. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** A small convenience sample (n=12) was administered the survey after 2 weeks to assess test-retest reliability (ICC for environment questions ranged from 0.30-0.94: for physical activity ICC=0.95, 95% CI=0.84-0.98. ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Supported by the Centers for Disease Control and Prevention Special Interest Project and by a grant from The Robert Wood Johnson Foundation. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Women were more likely to be active (OR=1.36, 95% CI= 0.50–3.66) and meet recommendations (OR=1.66, 95% CI= 0.70–3.94) if vehicular traffic is light in the neighborhood. 2. Neighborhoods in which women reported that unattended dogs were not a problem were less likely to be active (OR=0.91, 95% CI=0.54-1.54) and meet recommendations (OR=0.79; 95% CI= 0.44–1.41). 3. Women who perceived their neighborhood as safe from crime (either extremely or somewhat safe) were also more likely to be active (OR=1.34, 95% CI=0.81-2.20) and meet recommendations (OR=1.69; 95% CI= 0.82–3.47). 4. Women (n=216) who reported having places within walking distance were less likely to be active (OR=0.87; 95% CI= 0.31–2.44) and meet activity recommendations (OR=1.58, 95% CI= 0.64-3.90). 5. Women who reported having places to exercise in their neighborhood were less likely to meet activity recommendations (OR=0.56, 95% CI= 0.27-1.17) and be active (OR=0.54; 95% CI= 0.26–1.11). 6. Women were significantly less likely to be active if they reported knowing people who exercised (meets recommendations; OR=0.49, 95% CI=0.27-0.89, any activity; OR=0.42; 95% CI= 0.23–0.76), if they reported people in their neighborhood exercised ([meets recommendations: OR=0.16, 95% CI=0.06-0.45, any activity: OR=0.19; 95% CI= 0.09–0.42), if they belonged to community groups (meets recommendations: OR=0.67, 95% CI=0.39-1.15, any activity: OR=0.32, 95% CI= 0.15–0.69), or if they attended religious services (meets recommendations: OR=0.60, 95% CI=0.31-1.13, any activity: OR=0.41; 95% CI= 0.41–0.72). (Note: p-values not reported)

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Sanderson, Foushee (2003) Alabama	Access to places for physical activity and access to places within walking distance ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Presence or absence of sidewalks 2. Perceptions of safety from crime and presence of lighting 3. Perceptions of traffic safety 4. Distance to neighborhood places to walk *Complex:* 1. Neighborhood social support and self-efficacy	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 567 respondents in Greene, Lowndes, and Wilcox counties in Alabama. ***PRIMARY OUTCOME:*** Physical activity and meeting physical activity recommendations ***MEASURES:*** 1. Survey (sociodemographic information, general health, physical activity, and personal, social environment, safety [traffic, crime, dogs, lighting], lack of sidewalks, places within walking distance, places for physical activity) ***DATA COLLECTION:*** The University of Alabama at Birmingham's Survey Research Unit within the Center for Health Promotion conducted the telephone surveys. The study used a questionnaire developed and pilot tested through the Women's Cardiovascular Health Network Project. A higher social score indicated less negative factors influencing participation in physical activity. Open-ended questions were included to identify potential strategies for promoting physical activity within the target community. Women were grouped into three categories that described their physical activity pattern: (1) inactive (not engaging in any activities); (2) insufficient (not meeting recommendations for activities); and (3) meeting recommendations (engaging in moderate physical activity for at least 30 minutes for five times per week or vigorous activity for at least 20 minute for three times per week). Interclass correlation coefficients (ICCs) for social issue scale ranged from 0.46 to 0.75, indicating a moderate agreement comparable to the range across all sites (0.42–0.68). Environmental variables include a composite score of distance to places to walk, safety from crime, street lighting, unattended dogs, presence of sidewalks, and traffic safety. ***LIMITATIONS:*** Causal inferences cannot be made by using a cross-sectional study; survey data was self-reported; the sample was limited to a very specific location as well as individual type and results may not be generalizable; walking was not distinguished from other types of physical activity	Rural, Female, Adults, 20-50 years old, 75-77% African American (evaluation sample) The data was collected from a predominately impoverished rural area. Education level from the evaluation sample was similar to the Alabama BRFSS demographic data for African-American women; however, income level was somewhat lower. ***ELIGIBILITY:*** Females 20-50 years old were eligible to participate. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from the University of Alabama at Birmingham. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** The test-retest reliability specific to this study population was only examined on the social issue scale with 47 respondents. ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Not reported ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Researchers found no physical environmental variables that were significantly associated with comparison of either activity-level group. 2. Women reporting good lighting at night were less likely (OR=0.48, 95% CI= 0.27- 0.88) to report any physical activity. 3. Women meeting recommendations (n=221) compared to women who did not (n=346) were more than twice as likely to see people exercising in the neighborhood (87.2%, OR=2.02, CI=1.08-3.77) and to attend religious services (84.9%, OR=2.10, CI=1.21-3.65). 4. Women who reported any activity (n=481) compared with inactive women (n=86) were more likely to know people who exercise (OR=1.82, 95% CI=1.06-3.15), have higher social issue scores (OR=1.29, 95% CI=1.11-1.49), and were more than 3 times as likely to report attending religious services (OR=3.82, 95% CI=2.16-6.75).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Wilson, Kirtland (2004) South Carolina	Access to physical activity facilities (trails and pools) ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of traffic safety 2. Perceptions of safety from crime and unattended dogs 3. Presence of sidewalks *Complex:* 1. Social environment	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 1194 participants from a rural U.S. southeastern county ***PRIMARY OUTCOME:*** Meeting physical activity and walking recommendations ***MEASURES:*** 1. 2001 Behavioral Risk Factor Surveillance System physical activity module (frequency, duration, and levels of physical activity) 2. Perceptions of Environmental Supports Questionnaire (access to sidewalks and public recreation facilities, presence of traffic, street lighting, unattended dogs, safe neighborhoods, pleasant neighborhoods, neighbors that could be trusted, community-level physical activity supports [e.g., having walking or bicycling trails, public pools], length of residency, individual-level demographic data) 3. Geographic Information System [GIS] data (coordinates/locations of physical recreation facilities, shopping malls, walking/biking trails, respondents' home address, places of worship, schools, violent crime incidents, and unattended dogs) 4. 2000 US Census (census tract level data for socioeconomic status) ***DATA COLLECTION:*** Residents were surveyed from January to February, 2001. Interviewers conducted the telephone survey from 9:00 a.m. to 9:30 p.m., Monday through Friday, from 10:00 a.m. to 4:00 p.m. on Saturday, and from 3:00 p.m. to 8:00 p.m. on Sunday. The test-retest reliability of the Perceptions of Environmental Supports Questionnaire ranges between r=.42 and r=.74 for the neighborhood-level variables and between r=.28 and r=.56 for the community-level variables. The interviews were conducted using Sawtooth Ci3 computer-aided telephone software. Databases used in this study were collected from state agencies, city and county offices, and private companies. Telephone contacts were made in the study community to determine opportunities for physical activity at schools and places of worship. GIS software was combined with a South Carolina 911-road file to geo-code locations. Number of violent crimes was estimated at the neighborhood and community level for each respondent. ***LIMITATIONS:*** Causal inferences cannot be made using cross-sectional data; the survey response rate is modest	Adults General population, 18-96 years of age 41.5% Lower income (evaluation sample) ***ELIGIBILITY:*** Eligible participants had a working telephone contact within their household. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from the Research Laboratory at the University of South Carolina. ***THEORY/ FRAMEWORK:*** Social-ecological perspective ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Items for the questionnaire were developed from focus groups conducted with residents living in the southeastern county where this study took place. ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** The Cardiovascular Health Branch, Centers for Disease Control and Prevention cooperative agreement ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Higher perceptions of having and using walking/ bicycling trails were significantly associated with meeting the recommendations for physical activity among low-socioeconomic status respondents (OR=2.81, CI= 1.38-7.93, p=0.05) but not for high-socioeconomic status respondents. 2. In the low-socioeconomic status group, higher perceptions of having and using walking/bicycling trails were significantly associated with walking 150min/week (OR=3.04, CI= 1.24-7.48, p=0.052). 3. For high-socioeconomic status respondents, having and using places of worship that offered physical activity opportunities was significantly associated with being more likely to walk 150 min/week (OR=1.77, CI= 0.86-3.65, p=0.013). ***ACCESS:*** 4. Respondents from low-socioeconomic status areas reported lower perceptions of access to public recreation facilities (p<0.01) but higher perceptions of access to sidewalks in their neighborhoods than those from high-socioeconomic status areas (p<0.01). No other group differences were significant. ***OTHER:*** 5. Respondents from low-socioeconomic status (vs. high-socioeconomic status) areas report higher perceptions of unpleasantness of neighborhoods, unattended dogs, neighborhood crime, and untrustworthy neighbors (p<0.01).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Joshu, Boehmer (2008), Brownson, Baker (2001) United States	Access to places to exercise (e.g., shopping malls, parks, trails) ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Presence of sidewalks 2. Neighborhood characteristics (e.g., enjoyable scenery, heavy traffic, hills) 3. Perceptions of traffic barriers *Complex:* 1. Social and personal barriers	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 1818 United States adults of diverse ethnicity and income level ***PRIMARY OUTCOME:*** Overweight/obesity and physical activity ***MEASURES:*** 1. Height and weight (calculated body mass index [BMI]) 2. County Sprawl Index (metropolitan counties gross population density, percentage of county population living in suburban and urban densities, net density, block size, percentage of blocks with less than 1/100 square miles) 3. Survey (perceived barriers to physical activity including hills, lack of sidewalk, personal barriers including fear of injury, limited time, and intensity and frequency of physical activity) ***DATA COLLECTION:*** Data used for this study was collected by researchers who conducted interviews between September 1999 and January 2000. Respondent zip codes were matched to county of residence on the basis of Federal Information Processing Standard [FIPS] codes and a level of urbanization (e.g., large metropolitan, rural) was assigned to each respondent. The survey instrument was developed using a combination of questions from the Behavioral Risk Factor Surveillance System [BRFSS], the National Health Interview Survey and other surveys. Personal barrier scores were totaled to create a summary score. Larger values of the sprawl index indicate more compact counties whereas smaller values indicate more sprawling counties. ***LIMITATIONS:*** Data was self-reported; some BRFSS items have not been systematically examined; study design is cross-sectional restricting causal inferences; perceived measures of neighborhood barriers were used rather than observed measures	Adults, 45.7% Minority: 54.3% White, 29.4% Black, 2.1% Asian/Pacific Islander, 2.7% Indian/Alaskan native, 11% Other, 0.4% missing/ unknown, 39.3% Lower-income 67.1% Female (evaluation sample) To obtain a representative sample of lower income individuals, zip codes were over sampled in which 32% or more of residents were below the federal poverty level. The sample tended to under-represent men, Whites, and higher income groups (in comparison with data from the US census). ***ELIGIBILITY:*** Not reported ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from Saint Louis University Prevention Research Center ***THEORY/ FRAMEWORK:*** Ecological framework ***EVIDENCE-BASED:*** Previous investigation of the macro-environment has shown that communities differ in demographic, physical, social and economic factors depending of level of urbanization. ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** This study was funded through the Centers for Disease Control and Prevention including support from the Community Prevention Study of the National Institutes of Health Women's Health Initiative. ***STRATEGIES:*** Not applicable	***OVERWEIGHT/OBESITY:*** 1. An increase in the number of perceived neighborhood barriers increased the odds of being obese (chi-square for linear trend, $p<0.05$). 2. Heavy traffic was associated with obesity within large metropolitan (adjusted OR= 1.9, 95% CI= 1.3-2.9), micropolitan (adjusted OR= 2.2, 95% CI= 1.03-4.5) and rural areas (adjusted OR= 1.7, 95% CI= 0.8-3.3. 3. Hierarchical linear modeling found that the effect of sprawl on BMI is greater for individuals who report a greater number of personal barriers. The effect of sprawl on BMI increased by -0.006 with each additional personal barrier. 4. An increase in the number of personal barriers increased the odds of being obese (chi-square for linear trend, $p<0.001$). ***PHYSICAL ACTIVITY:*** 5. Access to parks (adjusted OR=1.95, 95% CI=1.52, 2.52), indoor gyms (adjusted OR=1.94, 95% CI=1.45, 2.60), and treadmills (adjusted OR=1.48, 95% CI=1.13, 1.93) were positively associated with physical activity. 6. Neighborhood characteristics, including the presence of sidewalks (OR=1.28, 95% CI=1.02, 1.59), enjoyable scenery (OR=1.46, 95% CI=1.13, 1.88), heavy traffic (OR=1.28, 95% CI=1.04, 1.58), and hills (OR=1.28, 95% CI=1.04, 1.58), were positively associated with physical activity. 7. Two policy variables were positively associated with physical activity: believing that employers should provide time for exercise (adjusted OR=1.27, 95% CI=1.01, 2.01), and support for the use of local government funds for walking or jogging trails (adjusted OR=1.42, 95% CI=1.00, 2.01). 8. Among individuals indicating some degree of physical activity, the following environmental supports were associated with reports of increases in activity: neighborhood streets (22.6% of respondents), shopping malls (25.9%), parks (28.5%), walking and jogging trails (29.9%), treadmills (30.6%), and indoor gyms (33.7%). 9. Among those with lower incomes, the most important neighborhood variable was enjoyable scenery (OR = 1.53, 95% CI = 1.07, 2.18). 10. The presence of sidewalks was the most important neighborhood variable among those with higher incomes (OR = 1.46, 95% CI = 1.08, 1.97).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Kerr, Rosenberg (2006) Washington	Access to local biking and walking facilities ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of neighborhood safety (crime) 2. Perceptions of neighborhood traffic 3. Street connectivity and perceptions of neighborhood aesthetics 4. Perceived access to local shops and facilities *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 259 parents in neighborhoods of King County, WA ***PRIMARY OUTCOME:*** Physical activity (PA) ***MEASURES:*** 1. Survey (physical activity [number of days per week their child walked or biked, rode in a car or school bus, or took public transportation to and from school], self-reported sociodemographic variables and perception of the local environment) 2. The Neighborhood Environment Walkability Scale [NEWS] (participant address [geo-coded], 1 kilometer buffer around residence, residential density, proximity and ease of access to nonresidential land uses [e.g., restaurants], street connectivity, walking or cycling facilities, aesthetics, pedestrian traffic safety, and crime safety) ***DATA COLLECTION:***Data for this study used information from the Neighborhood Quality of Life Study [NQLS], which combines Geographic Information Systems [GIS] data and Census data. Parents answered supplemental questions with regard to the youngest or only child in the household between 4-16 yr of age. Data was collected throughout an entire year, to allow for variations in activity because of weather. The NEWS is a GIS based index combining net residential density, retail floor area ratio, intersection density, and land use mix. ***LIMITATIONS:*** The small sample size and cross-sectional data; limit the ability to infer causal relationships	Parents; 20-65 years old, 83.3% White,16.7% Minority Children; 45.9% >12 years old (evaluation sample) ***ELIGIBILITY:*** Eligible participants had children 4 to 18 years old, provided consent, had a working telephone, and lived within the neighborhood study areas. Parents of children with disabilities were not included in the study. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from San Diego State University, Cincinnati Children's Hospital and Health Center and the University of British Columbia. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** National Heart Lung, Blood, and Blood Institute of the National Institutes of Health ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. In high-income neighborhoods, more children actively commuted in high-walkable (34%) than low-walkable neighborhoods (23%) (odds ratio= 2.1, 95% CI= 1.12-3.97, p<0.05), but no differences were noted in low-income neighborhoods. 2. Parent concerns, neighborhoods aesthetics, and stores within a 20-minute walk were independently associated with active commuting (parent aesthetics: OR= 5.2, 95%CI =2.71-9.96, p<0.05; aesthetics: OR=2.5, 95% CI=1.33-4.80, p<0.05; store distance: OR= 3.2, 95%CI= 1.68-6.01, p<0.05). 3. Perceived access to local stores and biking or walking facilities accounted for some of the effect of walkability on active commuting (OR=2.0, 95% CI=1.03-4.00, p<0.05). 4. In high-income neighborhoods, more children actively commute in high-walkable (34%) than in low-walkable neighborhoods (23%), but no differences are noted in low-income neighborhoods. 5. Parent concerns and neighborhood aesthetics were independently associated with active commuting (parent concerns: OR=4.9, 95% CI=2.54-9.40, p<0.05; aesthetics: OR=2.4, 95% CI=1.23-4.56, p<0.05). 6. Parent concerns about their child walking or biking to school were significantly inversely associated with residential density and neighborhood-level walkability (OR= 2.0, 95%CI= 1.08-3.84, p<0.05 and OR=1.7, 95%CI=1.00-2.85, p<0.05, respectively). 7. Parents of children aged 12-18 had significantly fewer concerns about active commuting (p=0.004) than parents of children 5-11 years old, but child gender and parent education or gender were not significantly related to parent concerns. 8. A parental concerns scale was most strongly associated with child active commuting (OR=5.2, 95% CI= 2.71-9.96, p<0.05).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Handy, Cao (2008); Handy, Cao (2006) California	Access to places to be active ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Land-use mix and distance to destinations 2. Perceptions of safety (crime) 3. Street connectivity *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 1682 adult "movers" and "non-movers" from 8 neighborhoods ***PRIMARY OUTCOMES:*** Walking and biking ***MEASURES:*** 1. 12-page survey (sociodemographic data, mobility constraints, residential tenure, frequency of transport and leisure walking and walking to specific destinations in the past 30 days, change in walking and biking before the move [for movers] or from one year ago [for non-movers], perceptions and preferences for accessibility, activity and socializing opportunities, attractiveness, presence of outdoor spaces, and safety [crime, lighting], travel attitudes [pro-bike/walk, pro-transit, pro-travel, travel minimizing, safety of car, car dependency], frequency and intensity of activity in past week) 2. Geographic Information Systems [GIS] data (geo-coded residential address, street network distance from residence to destination) 3. New Neighborhoods Contact service (2 residential databases for names of "movers" and "non-movers") 4. Yellow pages (commercial destinations; institutional [e.g., church], maintenance [e.g., grocery store], eating out [e.g., bakery], and leisure [e.g., health club]) ***DATA COLLECTION:*** The New Neighbors Contact Service databases identified "movers" and "non-movers" to traditional neighborhoods (built in pre-World War II, more connectivity) and suburban (built more recently, less connectivity) neighborhoods. Database contacts were mailed 2 rounds of questionnaires at the end of September 2003. In November, a second copy of the survey was sent to non-responders. Surveys questions were developed using previous research projects and items from the International Physical Activity Questionnaire, which was then pretested with UC Davis students, staff, and area residents. A reliability test for frequency of neighborhood physical activity (NPA) produced an intra-class correlation coefficient (ICC) of 0.20 (n=23). Reliability testing for the change in physical activity over the last year produced an ICC of 0.89 (n=16). *(continued next page)*	Adults, General population, Urban, Suburban (target sample) According to the 2000 US Census the evaluation sample tended to be older on average than neighborhood residents and the percent of households with children is lower among the evaluation sample for most neighborhoods. Median household income for the evaluation sample was higher than the census median for all but one neighborhood. ***ELIGIBILITY:*** Eligible participants had to have addresses that could be geo-coded. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from the University of California-Davis. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** University of California, Davis-Caltrans Air Quality Project, Robert Wood Johnson Foundation, and the University of California Transportation Center. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Objective measures for minimum distance to a bank (coefficient=0.082, p=0.035), number of banks within 800m (coefficient=0.091, p=0.005), and number of types of businesses within 1600m (coefficient=0.073, p=0.040) were positively associated with increased walking. 2. Individuals living in mixed-use neighborhoods (coefficient=0.0471, p=0.017) and living farther from health clubs (coefficient=0.0561, p=0.004) had higher neighborhood physical activity. 3. Individuals with higher perceptions of physical activity options (coefficient=0.0395, p=0.083), the social environment (coefficient=0.0447, p=0.026), attractiveness (coefficient=0.0866, p<0.0001), and stores within walking distance (coefficient=0.0549, p=0.004) engaged in neighborhood physical activity more frequently. 4. Respondents who preferred to be physically active (coefficient=0.118, p=0.004) and had stores within walking distance (coefficient=0.168, p<0.0001) walked to the store more frequently. Respondents who preferred to be safe (coefficient=-0.102, p=0.008) and have cul-de-sacs (coefficient=-0.065, p=0.084) walked less frequently, suggesting a self-selection effect. After controlling for these effects, distance to potential destinations, both objective (coefficient=-0.144, p<0.0001) and perceived (coefficient=0.268, p<0.0001) remained positively associated with neighborhood walking. Perceived safety (coefficient =-0.071, p=0.029) remained negatively associated with walking and attractiveness (coefficient=0.078, p=0.038) remained positively associated. 5. A significantly higher share of residents in traditional neighborhoods reported walking to a store at least once in the last 30 days compared to suburban neighborhoods (data not shown). Over 86% of residents in traditional neighborhoods strolled at least once in the last 30 days versus 79% of residents in suburban neighborhoods, with an average frequency of 10.1 strolls compared to 7.7 strolls. 6. Compared to suburban residents, residents in traditional neighborhoods perceived their neighborhoods on average as having higher accessibility (mean=0.15 vs. mean=-0.18, p<0.001), opportunities for socializing (mean=0.09 vs. mean=-0.12, p<0.001), and attractiveness (mean=0.28 vs. mean=-0.33, p<0.001). Residents in suburban neighborhoods on average perceived their neighborhoods as having greater safety (mean=0.16 vs. mean=-0.14, p<0.001) and outdoor spaciousness (mean=0.06 vs. mean=-0.05, p=0.02). *(continued next page)*

(Continued from previous study)						
		LIMITATIONS: Data was self reported; causality cannot be determined using cross-sectional data; total activity perceptions, and duration and intensity of activity were not assessed; neighborhood preference was measured retrospectively; there was temporal inconsistency between the two groups; there was no differentiation between home and neighborhood exercise; biking and walking substitute for one another; may have been response bias; there is a need to separate direct and indirect effects of attitudes on physical activity behavior; this analysis did not account for individual qualities or subsets of qualities of the built environment				7. Changes in perceptions of physical activity options (NPA coefficient=0.0586, p=0.046; walking coefficient=0.103, p<0.0001), attractiveness (NPA coefficient=0.151, p<0.001), accessibility (walking coefficient=0.103, p<0.0001), socializing (NPA coefficient=0.0549, p=0.052; walking coefficient=0.14, p<0.0001), and current safety (NPA coefficient=0.0672, p=0.025; walking coefficient=0.15, p<0.0001) were associated with increased neighborhood physical activity and walking. 8. Travel-minimizing attitude (coefficient=-0.077, p=0.014), pro-transit attitude (coefficient=-0.121, p<0.0001), and preference for spaciousness (coefficient=-0.111, p=0.002) were all negatively associated with changes in biking, while attractiveness preference (coefficient=0.074, p=0.019) was positively associated. 9. The current number of household maintenance businesses within 1600 m (coefficient=0.090, p=0.012) and the minimum distance to a health club had (coefficient=0.071, p=0.045) positive effects on changes in biking.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Rutt, Coleman (2004) Texas	Access to places to be active ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Land-use diversity *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 452 adults from El Paso County ***PRIMARY OUTCOMES:*** Overweight/obesity and light, moderate, and vigorous physical activity ***MEASURES:*** 1. Behavioral Risk Factor Surveillance System Survey [BRFSS] (BMI, walking information, fruit and vegetable intake, number and type of morbidities, age, number of children, Environmental characteristic [slope, land-use, street connectivity, distance to physical activity facilities, sidewalk availability, safety to exercise]) 2. San Diego Health and Exercise Survey (light, moderate, and vigorous physical activities and sedentary activities) 3. Los Angeles Epidemiologic Catchment Area study (acculturation, ethnicity, the Hollingshead Four-Factor Index of Social Status and the Compendium of Physical Activities survey) 4. Arc View aerial photographs (sidewalk availability) 5. US Census 2000 (population density, intersection density) ***DATA COLLECTION:*** Data was collected from the El Paso City Parks and Recreation Department; the Center for Environmental Resource Management; and the Planning, Research, and Development Dept. of El Paso City Hall. Characteristics of a neighborhood were determined within a 0.25 mile radius around each respondents home. Environmental variables were evaluated using Geographic information systems [GIS] software. Survey data was matched with environmental data, first by matching telephone numbers to existing database (El Paso community walking initiative), then using a reverse people finder website. Structural Equation Modeling [SEM] was used to model the relationships between built environment variables, physical activity, and BMI. ***LIMITATIONS:*** Only 38% of those contacted agreed to participate in survey, and only 48% of them could be geo-coded and included in analysis; PA, height, and weight were self-reported; use of telephone survey could underestimate individuals in lowest income brackets; trees, missing aerial photographs, use of 5 year old photos, and lack of data on sidewalk quality limited the sidewalk availability variable; no information about the perceived environment was collected	Adults 73% Hispanic, 29% Caucasian (evaluation sample) Participants with geo-coded addresses were significantly older than participants who did not have geo-coded addresses (44 vs. 39 years old). ***ELIGIBILITY:*** Participants were excluded if they were not a resident of El Paso county, did not have a telephone, or if it was disconnected. 7,234 calls were made, 4,544 of which were excluded (63%). From the remaining 2,690 residences, 1,665 were contacted and refused to complete the survey (62% refusal rate). 943 adults had complete surveys and only 452 had addresses that could be geo-coded. ***EXPOSURE/ PARTICIPATION:*** Not reported	***LEAD AGENCY:*** Researchers were from University Of Texas - El Paso and San Diego State University ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Not reported ***STRATEGIES:*** Not applicable	***OVERWEIGHT/OBESITY:*** 1. Significant direct predictors of BMI were moderate intensity physical activity (p=0.05), overall health (p=0.0004), SES (p=0.0003), and living in an area with more mixed land use (p=0.03). 2. A mediating relationship was found for poorer overall health (p=0.004) predicting more perceived barriers to physical activity (R^2=0.05), which in turn predicted less self-reported moderate physical activity (p=0.04) and then higher BMI (R^2=0.20). 3. The proposed model explained variance in BMI for a random sample of El Paso residents (R^2=0.20). ***PHYSICAL ACTIVITY:*** 4. Time spent in vigorous physical activity was predicted by fruit and vegetable intake (p=0.04), younger age (p=0.0002) and increased distance to physical activity facilities (p=0.04, R^2=0.14). 5. The only significant predictor of time spent in light physical activity was number of co-morbidities (p=0.02, R^2=0.06). 6. Other findings included increased fruit and vegetable consumption (p=0.04) and younger age (p=0.02) as predictors of time spent in moderate physical activity (R^2=0.10).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Motl, Dishman (2005) South Carolina	Access to local parks, playgrounds and gyms. ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of safety from traffic 2. Neighborhood perceptions of safety and crime *Complex:* Not reported	***DESIGN:*** Cross-sectional ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 1038 eighth and ninth grade participants from 12 control high schools (and their associated middle schools) from an intervention ***PRIMARY OUTCOMES:*** Physical activity ***MEASURES:*** 1. Questionnaire (n=856 baseline) (perceived environment [home equipment for physical activity], proximity to playgrounds, parks, or gyms, interpersonal safety [unattended dogs, gangs, and crime], traffic safety, self-efficacy for overcoming barriers, barriers [sidewalk, etc.]) 2. 3-Day Physical Activity Recall [3DPAR] (frequency, duration, intensity, and type of physical activity) ***DATA COLLECTION:*** Data used for the present study came from results of a school based intervention. The measures were administered by trained data collectors in the spring semesters of 1999 (baseline) and 2000 (follow-up). Items for self-efficacy had an internal consistency of Cronbach coefficients; 0.78 and 0.79 for the baseline and follow-up data, respectively. Recall physical activity behavior was analyzed for 3 days of the week (first Tuesday, then Monday, then Sunday). To improve the accuracy of physical activity recall, the 3 days were segmented into 34 30-minute time blocks, beginning at 7:00 am and continuing through to 12:00 am. To help students select a relative intensity, the instrument included illustrations depicting activities representative of the various intensities. Based on the specific activity and level of intensity, each 30-minute block was assigned a metabolic equivalence (MET) value. The MET values were summed over each of the 3 days. The validity of the 3DPAR as a measure of usual activity has been established based on correlations with an objective measure of physical activity derived from accelerometry. The correlations between MET values and total counts were 0.51 and 0.46 for 7 and 3 days of accelerometer monitoring, respectively. ***LIMITATIONS:*** Scales with few items likely suffer from issues of weak content aspects of score validity and poor internal consistency; a limited set environmental influences were sampled; one limitation is the use of self-report measures of study variables	13.6 ± 0.6 years (mean age), Female, 40.6% African-American, 38.9% Caucasian, 3% Other, 17.5% not reporting racial composition (evaluation sample) ***ELIGIBILITY:*** Not reported ***EXPOSURE/ PARTICIPATION:*** 24 high schools were part of the intervention with a total of 1964 girls.	***LEAD AGENCY:*** Researchers were from the University of Illinois, University of Georgia, University of North Carolina, and the University of South Carolina. ***THEORY/ FRAMEWORK:*** Social cognitive perspective ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** This research was supported by a grant from the National Heart, Lung, and Blood Institute. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. With the baseline data, there was a statistically significant relationship from equipment accessibility to physical activity (gamma=0.33), but not from neighborhood safety to physical activity (gamma=-0.03). 2. The path between the same latent variables across time (i.e., stability coefficients) were statistically significant for equipment accessibility (gamma=0.42), neighborhood safety (gamma=0.59), and physical activity (beta=0.46). There were statistically significant correlations among the environmental variables at baseline (phi=0.50). 3. With the baseline data, there was a statistically significant relationships from equipment accessibility to self-efficacy (gamma=0.64), but not from neighborhood safety to self-efficacy (gamma=-0.14). There was a statistically significant relationship from self-efficacy to physical activity (beta=0.35), but not from equipment accessibility to physical activity (gamma=0.13) or neighborhood safety to physical activity (gamma =0.01). Hence, self-efficacy mediated the effect of equipment accessibility on physical activity (indirect effect=0.22) in the baselin 4. There were statistically significant correlations among the environmental variables at baseline (phi=0.47).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Multiple Strategies (Includes parks, playgrounds, trails, recreation centers, and joint-use)-International						
Giles-Corti, Donovan (2002); Giles-Corti, Donovan (2002); Giles-Corti, Donovan (2003); Giles-Corti, Macintyre (2003); McCormack, Giles-Corti (2007); McCormack, Giles-Corti (2008) Australia	Access to recreation destinations ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Access to transit stations 2. Access to destinations and land-use mix 3. Neighborhood perceptions of traffic safety 4. Road network distance and presence of sidewalks 5. Perceived neighborhood safety *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not reported ***SAMPLE SIZE:*** 1755 participants in Perth, Australia ***PRIMARY OUTCOME:*** Overweight/obesity, physical activity (PA), meeting recommendations for walking, and walking behavior ***MEASURES:*** 1. Survey (physical activity [type, frequency, duration, and intensity during past 2 weeks], streetscape of the respondents home, attractiveness of open spaces, physical activity club memberships, access to a motor vehicle, recreation destinations [inside or outside neighborhood, free or pay parking], perceptions of safety and interest [traffic and hazards], perceptions of the social environment, perceptions of access [sidewalks, etc.], opportunities for activity within walking distance, height and weight [body mass index [BMI]) 2. Geographic Information Systems [GIS] (geo-coded address, shortest road network distance [destination present within 400 meters (m) and 1500m of home], individual access for destinations and facilities [Hansen's spatial accessibility model; objective factors for access]) 3. Environmental Scan (access to footpaths, shops, traffic, aesthetic environment) 4. Yellow and White Pages Telephone Directory, the Australian postal service, the Western Australian Department of Transport, and the Western Australian Ministry of Planning (total count for available destinations, commercial addresses for post boxes, convenience stores, newsagents, schools, bus stops, transit stations, parks, the river, and beaches) 5. Socioeconomic Index for Areas [SEIFA; Australian Bureau of Statistics] (socioeconomic status, demographic data) ***DATA COLLECTION:*** This study used data from the Study of Environmental and Individual Determinants of Physical Activity [SEID 1]. Only items with an intra-class coefficient or k greater than or equal to 0.60 were included in the main study. The survey was modified using items from other major Australian studies. Objective assessments were made on the street in front of the respondent's home. Data collection began in late spring 1995 and took 5 months to complete (August 1995-March 1996). One household participant was interviewed in a face-to-face meeting. Interviews were followed-up with a telephone survey 2-4 weeks later. Perceptions of access were placed into quartiles. *(continued next page)*	Adults 18-59 years old (evaluation sample) The sample was comprised of relatively young, healthy, sedentary workers and homemakers living in high or low SES areas. ***ELIGIBILITY:*** Eligible participants were under the age of 59, employed, residing in their suburb for 1 or more years, could not regularly exercise at work, could not have a medical condition restricting physical abilities, and had to be proficient in English. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from the University of Western Australia and the University of Glasgow. ***THEORY/ FRAMEWORK:*** Theory of Planned Behavior and the Theory of Trying; these are derived from the Theory of Reasoned Action an 'expectancy model' that states that individuals are more motivated to perform behaviors they believe will result in highly valued outcomes. ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** The reliability of newly developed items was assessed in the extensive pilot phase. Modified weights for attractiveness were derived from a survey of urban planners. ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Western Australian Health Promotion Foundation (Healthway) Health Promotion Research Scholarship, a NHMRC/ NHF Career Development Award. ***STRATEGIES:*** Not applicable	***OVERWEIGHT/OBESITY:*** 1. Overweight individuals were more likely to live on highways (OR=4.24; 95%CI= 1.62-11.09), streets with no sidewalks (OR=1.4, 95%CI= 1.01-1.95), streets with sidewalks on one side only (OR=1.32; 95%CI= 0.98-1.79) and perceive no paths within walking distance (OR=1.42; 95% CI= 1.08-1.86). 2. Those who always had access to a motor vehicle were about half as likely to be obese as those who never had access to a motor vehicle (OR=0.56, 95%CI= 0.32-0.99). 3. Obese individuals were nearly twice as likely as others to perceive that there was no shop within walking distance (OR=1.84, 95%CI= 1.01-3.36). 4. Individuals with poor access to 4 or more recreational facilities were 68% more likely to be obese compared with others (95%CI= 1.11-2.55). ***PHYSICAL ACTIVITY:*** 5. Residing within 1500 m of destinations including schools (OR=1.75, 95% CI= 1.28-2.39, p<0.001), convenience stores (OR=1.89, 95% CI= 1.26-2.84, p<0.001), shopping malls (OR=2.07, 95% CI= 1.43-3.00, p<0.001), newsagents (OR=2.20, 95% CI= 1.60-3.03, p<0.001), and transit stations (OR=2.38, 95% CI= 1.67-3.39, p<0.001) was significantly associated with regular walking for transport. 6. Having a transit station located within 1500 meters was positively associated with regular walking for recreation (OR=1.50, 95% CI= 1.09-2.05, p<0.05), while having a beach within 1500 meters was positively associated with irregular walking for recreation (OR=1.97, 95% CI= 1.01-3.83, p<0.05) and regular vigorous physical activity (OR=1.93, 95% CI= 1.20-3.13, p<0.01). 7. For each additional different type of destination (including recreational and utilitarian destinations) within 400 and 1500 m, the odds of regular walking for transport increased by 43% (95% CI= 1.27-1.61, p<0.001) and 41% (95% CI= 1.26-1.58, p<0.001) and the odds of irregular walking for transport increased by 27% (95% CI= 1.12-1.44, p<0.001) and 23% (95% CI= 1.12-1.35, p<0.001). 8. For each additional type of destination located within 1500 meters the odds of regular walking for recreation increased by 16% (95% CI= 1.06-1.27, p<0.01), while the odds of irregular walking increased by 12% (95% CI= 1.01-1.26, p<0.05). 9. The mix of utilitarian destinations within 1500 m was positively associated with regular walking for recreation (OR=1.17, 95% CI= 1.05-1.29, p<0.01). 10. Destination mix was not associated with time spent walking for recreation or vigorous physical activity. *(continued next page)*

(Continued from previous study)						
		LIMITATIONS: Individual measures were self-reported; Perth has a higher standard of living than national and international standards; study only used data from participants in the top and bottom quintile of social advantage; study area was restricted by available resources; this study used distance-only model to determine spatial accessibility; use of cross-sectional data limits assumptions of causality; random chance cannot be ruled out; several destinations that may be important for transport-related and vigorous-intensity physical activity were not included				11. In comparison with those who had no sidewalk and no shop on their street, those who had access to either or both of these attributes were about 25% more likely to achieve recommended levels of walking (combined OR=1.25, 95%CI= 0.90-1.74). 12. Among individuals who frequented pay for use recreational destinations, each additional pay destination (OR=1.51, 95%CI= 1.32-1.73, p<0.001), having access to a motor vehicle (OR=0.51, 95%CI= 0.26-0.99, p<0.05), and having a club membership (OR=6.83, 95%CI= 3.39-13.73, p<0.001) were associated with the use of pay-destinations located in the neighborhood. 13. Those who used a pay destination located within or outside (OR=8.46, 95%CI= 3.98-18.00, p<0.001 and OR=3.48, 95%CI= 2.59-4.66, p<0.001, respectively) the neighborhood were more likely than those who did not use a pay destination to achieve sufficient vigorous-intensity physical activity. 14. Respondents using free destinations within and outside the neighborhood were more likely to achieve sufficient levels of vigorous-intensity physical activity than those not using a free recreational destination (OR=1.56, 95%CI= 1.00-2.33, p<0.05 and OR=2.13, 95%CI= 1.56-2.89, p<0.001, respectively). 15. Respondents were more likely to walk for transport if they were in the top quartile for access to attractive public open space (OR=1.35, 95%CI= 1.05-1.73, p=0.02) and if they perceived that their neighborhood had sidewalks (OR=1.65, 95%CI= 1.12-2.41, p=0.011), a shop within walking distance (OR=3, 95%CI= 2.04-4.4, p<0.0001), and more traffic and busy roads (OR=1.26, 95%CI= 1.01-1.56, p=0.038). 16. The likelihood of walking for recreation was higher in residents in the top quartile of access to the beach (OR=1.49, 95%CI= 1.14-1.93, p=0.003) and those who perceived their neighborhood as being attractive safe and interesting (OR=1.49, 95%CI= 1.14-1.95, p=0.003), and that there was support for walking locally (OR=1.8, 95%CI= 1.36-2.4, p<0.0001) 17. Respondents were more likely to walk as recommended if they were in top quartile of access to public open space (OR=1.43, 95%CI= 1.07-1.91, p=0.015) and perceived their neighborhood as being attractive, safe, and interesting (OR=1.50, 95%CI= 1.08-2.09, p=0.017), and supportive of walking locally (OR=1.52, 95%CI= 1.09-2.11, p=0.014). 18. Those who exercised vigorously were more likely to live in high SES areas (OR=1.00), to be in the top quartile of access to the beach (OR=1.38, 95%CI= 1.07-1.79, p=0.013), to perceive their neighborhood as being attractive, safe, and interesting (OR=1.39, 95%CI= 1.08-1.79; p=0.01); and to claim that there were sidewalks in the neighborhood (OR=1.52, 95%CI= 1.05-2.21, p=0.027). 19. The greater the number of significant others who exercised weekly with the respondent, the more likely recommended levels of activity were achieved (four or more vs. none, OR=1.37m 95%CI= 0.83-2.25) test for trend p<0.001). 20. Walking at recommended levels was significantly associated with perceived behavioral control, frequency of a behavioral skill used in past month, intention to be active (high vs. low, OR=1.83, 95%CI= 1.14-2.94, p=0.13), having a club membership (OR=0.53, 95%CI= 0.39-0.74, p<0.001), owning a dog (OR=1.58, 95%CI= 1.19=2.09), social support for physical activity in the past 3 months, and being in the top quartile of access to attractive public open space (OR=1.47, 95%CI= 1-2.15, p=0.048). 21. In comparison with those who had major traffic and no trees on their street, the odds of achieving recommended levels of walking were nearly 50% higher among those who lived on a street with one or both of these features (combined)R=1.49, 95%CI= 0.96-2.33). 22. Relative to respondents in the lowest determinant score categories, the odds of achieving recommended levels of walking were 3.1 times higher among those in the high individual determinant score category (95%CI= 2.2-4.37, p<0.0001), 2.79 times higher among those in the high social environmental determinant score category (95%CI= 2-3.9, p<0.0001), and 2.13 times higher among those in the high physical environmental determinant score category (95%CI= 1.54-2.94, p<0.0001). More associations with socioeconomic, demographic, irregular walking, minutes of walking, social support and attractive environment in text, not shown.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Kamphuis, Van Lenthe (2008) The Netherlands	Access to places for physical activity ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Neighborhood safety 2. Neighborhood aesthetics *Complex:* 1. Social disorder and support	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 3839 adults in 177 neighborhoods in Eindhoven and surrounding areas ***PRIMARY OUTCOME:*** Participation in sports ***MEASURES:*** 1. 2004 GLOBE postal survey (neighborhood [safety, attractiveness, places for physical activity, poor weather, social network, social cohesion, feeling at home, social disorganization, length of residence], household [indicators of material deprivation, indicators of social deprivation], and individual factors [positive and negative expectancies of physical activity, social influences, self-efficacy]; physical activity cognitions; socioeconomic status and demographic data [educational attainment, age]) 2. Short Questionnaire to Assess Health-enhancing Physical Activity [SQUASH] (sports participation [up to 4 sports participants participated in weekly for the previous month] frequency, duration, and intensity of sports participation and physical activity) ***DATA COLLECTION:*** Data for this study was collected from the results of a large-scale postal survey, a wave of the longitudinal GLOBE study in October 2004. Selection of items for the GLOBE questionnaire was based on a literature review, expert meetings, and focus groups conducted with residents living in the city of Eindhoven. Items measuring neighborhood, household, and individual factors were mostly derived from existing scales. SQUASH is a validated Dutch questionnaire to measure various types of physical activity among an adult population: commuting, leisure time, sports, occupational, and housekeeping activities. ***LIMITATIONS:*** Self-reported data; cross-sectional study design; objective neighborhood factors were not included; classification system used has not been standardized; individual-level cognition items were not behavior specific for sports participation	Adults 25-75 years old Mean number of participants per neighborhood =21; range=3-70. Compared with higher educational groups, people in the lowest education group were more likely to be female, and to be born in a country other than the Netherlands (evaluation sample). ***ELIGIBILITY:*** Participants for the GLOBE study were eligible if they did not have health problems that prohibited physical activity and if they fell into neighborhoods that had too few participants. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The authors were from Erasmus University Medical Centre, Queensland University of Technology, University Medical Center Groningen, and VU University Medical Center. ***THEORY/ FRAMEWORK:*** Social Cognitive Theory and the Theory of Planned Behavior were included in developing the survey. ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Ministry of Public Health, Welfare and Sport and the Health Research and Development Council ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Unsafe neighborhood (OR=1.77, 95%CI= 1.18-2.65, p=0.005), unattractive neighborhood (OR=1.45, 95%CI= 1.2-1.75, p<0.0001), insufficient places (OR=1.16, not significant), poor weather (OR=1.19, 95%CI=1-1.41, p=0.051), small social network (OR=1.23, 95%CI= 1.05-1.45, p=0.006), low social cohesion (OR=1.17, 95%CI= 1-1.38, p<0.0001) increased the likelihood of not participating in sports. 2. In the full model, two neighborhood factors (safety and social cohesion), three household factors (material deprivation [crowding] and social deprivation [going out fortnightly and going on holiday yearly], and nine individual factors (six outcome expectancies, social support modeling, self-efficacy, and intention) remained statistically significant. Compared with the basic model, all factors together reduced the odds of doing no sports among the lowest educational group by 57% (OR=2.29, 95%CI= 1.7-3.07), for the second-lowest by 48% (OR=1.62, 95%CI= 1.34-1.96), and for the second-highest by 26% (OR=1.48, 95%CI= 1.23-1.78). 3. People indicating not feeling at home in their neighborhood (OR; 1.26, CI; 1.07-1.48, p=0.018) were also more likely to do no sports, but this was not significantly prevalent among any of the educational groups (p=0.093).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
De Bourdeaudhuij, Sallis (2003) Belgium	Access to physical activity facilities ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Quality and access to sidewalks and bike lanes 2. Access to shops, residential density, land use mix, connectivity 3. Access to public transportation 4. Perceptions of neighborhood safety from crime *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 521 residents of Ghent, Belgium ***PRIMARY OUTCOME:*** Overweight/obesity and vigorous and moderate intensity physical activity, walking, sedentary behavior ***MEASURES:*** 1. Height and weight (body mass index [BMI]) 2. Seven-page questionnaire (IPAQ-items [physical activity], environmental perceptions and factors, demographic data, anthropometric data) 3. International Physical Activity Questionnaire [IPAQ] short-form items (past 7 day duration and intensity of physical activity and sedentary behavior) 4. Environmental items from 2 questionnaires (residential density, land use mix, access to public transportation, availability of sidewalks and bike lanes, neighborhood aesthetics, perceived safety from crime and traffic, connectivity of the street network, satisfaction with the neighborhood and its services, recreational physical activity [worksite environment, physical activity equipment in the home, convenience of physical activity facilities]) ***DATA COLLECTION:*** A seven page questionnaire was mailed with a letter explaining the purpose of the study and addressed to the randomly selected person who was requested to answer to the questionnaire. At 6 and 12 weeks non respondents received additional requests to complete the questionnaire. Two existing questionnaires were combined to measure environmental correlates of physical activity. A separate study was executed to test the reliability of the newly combined items, which had interclass coefficients ranging from 0.40 to 0.97 and validity coefficients ranging from 0.21 to 0.91. The International Physical Activity Questionnaire short form is self-administered and has 7 items to identify physical activity in the past 7 days. Validity and reliability results in 12 countries demonstrate that the IPAQ has comparable reliability and validity to other self-report measures of physical activity. ***LIMITATIONS:*** Purpose of walking was not distinct; survey data was self-reported; study conducted in one city limits generalizability; causal relations cannot be obtained using cross-sectional data; there was a lack of context specific physical activity measures; using the IPAQ short form, the difference between the purpose or context of an activity could not be disentangled	Adults,18-65 year olds (target sample) 41 ± 12.22 (mean) years, 48.3% Female, 70.1% employed, 39.3% urban dwellers, 54.9% suburban, 5.9% countryside (evaluation sample) Respondents appear to have better jobs, have a higher education, are more often employed, and under represent the number of individuals living alone compared with the Flemish reference population. ***ELIGIBILITY:*** Not reported ***EXPOSURE/ PARTICIPATION:*** The local government from the pool of all residents of Ghent, a city with 224,000 inhabitants and consisting of a city center, suburbs, and countryside.	***LEAD AGENCY:*** Researchers were from Ghent University in Belgium and San Diego State University in California. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** A separate study was executed to test the reliability of the newly combined environmental items. It was translated to Flemish and pretested with a small sample (n=40). ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Not reported ***STRATEGIES:*** Not applicable	***OVERWEIGHT/OBESITY:*** 1. Participants with a higher BMI reported less safety from crime (Pearson r= -0.11, p<0.05) and fewer convenient physical activity facilities (Pearson r= -0.11, p<0.05). ***PHYSICAL ACTIVITY:*** 2. In males, vigorous intensity physical activity was related to more convenient physical activity facilities (semi-partial correlate; 0.11, p≤0.05). In females, vigorous intensity physical activity was related to more convenient physical activity facilities (semi-partial correlate; 0.14, p≤0.05) and supportive worksite environment was related to more high intensity activity (semi-partial correlate; 0.12, p≤0.05). 3. In males, the amount of sitting was related to higher perceived criminality in the neighborhood (semi-partial correlate; -0.22, p≤0.01), longer distances to shops and businesses (land use mix, diversity) (semi-partial correlate; 0.14, p≤0.05), and more convenience of shopping in local stores (land use mix, access to local shopping) (semi-partial correlate; 0.15, p≤0.01). 4. Greater availability of sidewalks in the neighborhood was associated with walking in males (semi-partial correlate; 0.14, p≤0.05). In females, more walking was associated with greater ease of the walk to public transportation stops (semi-partial correlate; 0.16, p≤0.05) and to longer distances to shops and businesses (semi-partial correlate; 0.15, p≤0.05). 5. In females, more moderate intensity physical activity was related to better access to shopping in local stores (semi-partial correlate; 0.16, p≤0.05) and more emotional satisfaction with the neighborhood (semi-partial correlate; 0.13, p≤0.05). ***OTHER:*** 6. For females, less emotional satisfaction with the neighborhood was associated with greater amounts of sitting (semi-partial correlate= -0.15, p≤0.05). 7. In males, moderate intensity activity was related to more satisfaction with neighborhood services (semi-partial correlate; 0.15, p≤0.05). 8. Participants with a higher BMI reported less physical activity equipment in the home (Pearson r= -0.15, p<0.001).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Harrison, Gemmell (2007) United Kingdom	Access to facilities for leisure activities ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of neighborhood traffic safety 2. Perceptions of neighborhood safety from crime and vandalism *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 15,461 total adults of a resident population of 567,600; density was 1700 people per square kilometer ***PRIMARY OUTCOME:*** Physical activity ***MEASURES:*** 1. 50-item questionnaire (accessibility to transport, shopping, and leisure facilities; neighborhood disorder [crime, vandalism, assault], perceptions of traffic safety) 2. Godin and Shephard instrument (weekly frequency, duration, and intensity physical activity) 3. Townsend Index (deprivation [unemployment, overcrowding, non-car ownership and non-home ownership]) 4. 2001 National Census (residential density, address) ***DATA COLLECTION:*** Data were collected using a postal self-completion questionnaire as part of a population-based health and lifestyle survey in 2001. Postal questionnaires were sent with a cover letter and a business pre-paid return envelope. Non-responders were sent a reminder postcard 10 days later. After another 10 days, persistent non-responders were sent a reminder letter with another copy of the survey and a return envelope. Questionnaire constructs were taken from previous national surveys. The Godin-Shephard instrument is valid for use in epidemiological studies and discriminates between adults participating in different amounts and types of physical activity. The questionnaire included an introduction in Gujarati and Urdu, the main second languages spoken in the area, with information on the local health translation services. It was assumed respondents could conveniently walk to destinations in less than 10 minutes. ***LIMITATIONS:*** Cross-sectional study; self-reported measures were used for surveys; control for confounders was limited to the data originally collected; response bias	Adults, 95.5% White, 4.5% Minority, 95.5% Male, mean age 49.8 years (evaluation sample) ***ELIGIBILITY:*** Eligible participants were adults, registered with the 2001 registrar. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The researchers were from the University of Manchester in the UK ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Not reported ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. People who felt unsafe out and about in their neighborhood during the day (relative prevalence 0.70, 95% CI=0.59 to 0.82) and during the night (relative prevalence 0.82, 95% CI=0.78 to 0.88) were significantly less likely to be defined as physically active compared with those who felt safe during these times. 2. There was no association among physical activity and people stating that vandalism, and assaults or muggings were a problem in their neighborhood, also not among people who had or not been victims of personal crime during the past year. 3. People who thought that there was some problem with speeding traffic in their neighborhood (relative prevalence 1.08, 95% CI=1.10 to 1.14) were more likely to be physically active, but this was not consistent to this being a serious problem.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Lee, Kawakubo (2006) Japan	Access to parks and trails ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of neighborhood safety from crime 2. Street connectivity (alternate routes to locations) and neighborhood aesthetics 3. Proximity to parks or beaches from residence 4. Perceptions of neighborhood traffic safety *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 432 adults in two wards: one in metropolitan Tokyo (high walkability region, n=237)and one in rural northeastern Japan (low walkability region, n=195) ***PRIMARY OUTCOME:*** Walking time ***MEASURES:*** 1. Questionnaire (demographic data, daily walking, frequency and duration of walking for exercise, for commuting, and for purposes other than exercise, perception of neighborhood environment, total walking time, accessibility, safety, convenience, aesthetics, weather) ***DATA COLLECTION:*** Data was taken from a questionnaire collected for a local government health promotion program in January 2004. Total walking time (walking time for exercise, commuting or shopping and others) was used as neighborhood walking time. Responses regarding the perception of neighborhood characteristics were selected from a 6-point Likert scale ranging from strongly disagree (0) to strongly agree (5). The higher the score the more positive participants' perceptions were. Previous studies provided the definition for high walkability and low walkability regions. Questions were developed for Japanese neighborhood environmental characteristics by modifying questions from earlier studies, ICC of questionnaire 0.70. ***LIMITATIONS:*** Variation in participant's environment was not accounted for in this study; causal relationships cannot be established using a cross-sectional study design: because this study is cross-sectional it does not represent all respondents in the region; data came from participants in a health promotion study which may have led to selection bias	Adults, 56% Female (evaluation sample) ***ELIGIBILITY:*** Eligibility for the health promotion program was not discussed. Participants signed a consent form. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from the University of Tokyo, Kyoritsu Women's University, Alliant International University, and the University of Tokyo. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** This study was based on earlier studies that showed comparisons between different regions with large variations in neighborhood's physical environments that correlate to the factors affecting the walking behavior of residents, such as residential density, mixed land use and street connectivity. ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** The Japan Ministry of Health, Labor and Welfare as a part of the Study of the Evaluation of Community Environments for the Effective Health Promotion Plan, and by a grant from the Japan Ministry of Education, Culture, Sports, Science, and Technology as part of the Study of the Evaluation of Neighborhood Environments Affecting Residents' Daily Physical Activity. ***STRATEGIES:*** Not reported	***PHYSICAL ACTIVITY:*** 1. In the high walkable region, those who had high scores for "There is a park nearby that is suitable for taking a walk in" (low perception mean [sd]: 190.8[195.0] vs. high perception mean [sd] 300.2[279.5], $p<0.05$), "There is a river (or a beach) within walking distance" low perception mean [sd]: 217.2[211.7] vs. high perception mean [sd] 299.1[283.6], $p<0.05$), and "The neighborhood is conducive for taking a walk" (low perception mean [sd]: 245.0[233.5] vs. high perception mean [sd] 323.4[308.5], $p<0.05$) spent significantly more walking time. 2. In the safety category, the score for "Vehicular traffic does not hinder taking a walk" was significantly higher in the low walkable region (high; mean [sd]; 2.49[1.48], vs. low; 3.08[1.55], $p<0.01$). In the safety category the variable, "The sidewalk is well-lit even at night", showed significantly higher scores in the high walkable region (high; mean [sd]; 2.97[1.32] vs. low; 2.11[1.42], $p<0.01$). 3. In the convenience category, the score for "The sidewalks are wide enough to walk on" was significantly higher in the low walkable region (high; mean [sd]; 2.54[1.50] vs. low; 3.04[1.50], $p<0.01$), whereas that for "The walking map of the neighborhood is useful" was significantly higher in the high walkable region (high; mean [sd]; 3.58[1.29], vs. low; 2.45[1.64], $p<0.01$). 4. Those who had high scores for "There are sidewalks suitable for walking in the neighborhood" (high walkable: low perception mean [sd] 191.7[200.6] vs. high perception mean [sd] 302.9[279.7], $p<0.05$) (low walkable: low perception mean [sd] 125.9[182.1] vs. high perception mean [sd] 211.3[234.5], $p<0.05$) spent significantly more walking time in both regions. 5. In the low walkable region, those who had high scores for "There are several ways to get to one place" (low perception mean [sd]: 124.9[139.9] vs. high perception mean [sd]: 201.4[249.4], $p<0.05$), "It is easy to cross streets" (low perception mean [sd]: 145.1[162.7] vs. high perception mean [sd]: 214.6[270.2], $p<0.05$), "The sidewalks have few inclines and are easy to walk on" [low perception mean [sd]: 89.7[88.2] vs. high perception mean [sd]: 215.6[245.9], $p<0.01$) and "The sidewalks are wide enough to walk on" (low perception mean [sd]: 132.2[138.8] vs. high perception mean [sd]: 232.8[284.5], $p<0.01$) spent significantly more walking time. ***OTHER:*** 6. Those who had high scores for "Residents in the neighborhood are friendly" spent significantly more walking time in both regions (high walkable: low perception mean [sd]: 234.2[212.2] vs. high perception mean [sd] 381.0[254.5], $p<0.01$) (low walkable: low perception mean [sd]: 135.9[157.1] vs. high perception mean [sd]: 228.3[271.0], $p<0.05$).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Stahl, Rutten (2001); Rutten, Abel (2001) Germany, the Netherlands, Switzerland, Spain	Perceptions of local opportunities for physical activity ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* 1.Social support	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 3343 total adults from Belgium (n=389), Finland (n= 400), East Germany (n= 913), West Germany (n= 489), Netherlands (n= 366), Spain (n= 380), Switzerland (German-speaking part n= 406) ***PRIMARY OUTCOMES:*** Physical activity and sedentary behavior ***MEASURES:*** 1. Questionnaire for MAREPS (perceptions and awareness of opportunities or locations for physical activity in the residential and community area, perceived motivation from family, friends, and media to participate in sports and physical activity, health status [self-rated], and promotion of physical activity and sports policies) 2. Lipid Research Clinic Questionnaire items (found valid; physical activity [intensity, frequency, and type]) ***DATA COLLECTION:*** This research was conducted using data from the international MAREPS (A Methodology for the Analysis of Rationality and Effectiveness of Prevention and Health Promotion Strategies) an international research project. Data for this comes from a public survey that was conducted via a semi-standardized telephone interview schedule in autumn 1997 and spring 1998. The survey included multiple items in addition to using previously established items like the Lipid Research Clinic survey. The survey was provided in Dutch, Finnish, Flemish, German, Spanish, or Swiss German. Cronbach alpha reliability coefficients for the social environment questions ranged from 0.568 to 0.810. Cronbach alpha reliability coefficients for supportive physical and policy environment are 0.74. ***LIMITATIONS:*** Translation and concepts may vary from country to country; cross-sectional study design; response rates varied; most of the presented statistical analyses show low to moderate power and leave a comparably high percentage of variance unexplained; this study does not contain objective measures of the environment, but focuses on perceptions	Adults, 18 years or older General population 56.9% Female (evaluation sample) ***ELIGIBILITY:*** Must be18 years or older and had to speak the survey language. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from University of Chemnitz, Germany; University of Berne, Switzerland, University of Jyvaskyla, Finland; University of Alabama at Birmingham; University of Barcelona, Spain; Limburg University Centre, Belgium; Netherlands Institute of Primary Health Care, the Netherlands ***THEORY/ FRAMEWORK:*** Social Cognitive Theory ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** The European Union (Biomed2 program); the Ministry of Flemish Community Policy; Ministry of Education and Ministry of Social Affairs and Health; Saxon State-Ministry of Social Affairs, Health and Family Affairs, Health Research and Development Council; Department of Home Affairs, Federal Office for Public Health and Federal Office for Education and Science ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Those who had high perception of local opportunities (75.1% vs. 63.7%; p<0.001), were well informed about programs and actions (75.3% vs. 61.4%; p<0.001), perceived high support from health policy for physical activity and sports (p<0.001), and had high social support from personal environment (75.5% vs. 62.3%; p<0.001) were more likely to be active than their counterparts. 2. People who felt that health policy doesn't promote people's physical activity and sport were 57% more likely to be inactive compared to those who felt that health policy promotes people's physical activity and sport (OR=1.57 95%CI 1.28-1.91; p<0.001). After including the country variable, opportunity and health policy lost predictive power. 3. In terms of a linear relation, physical activity is associated weakly but significantly with perceived opportunities (r=0.09). 4. Those who perceived low social support from personal environment were over twice as likely to be sedentary than those who reported high social support from personal environment (37.7% vs. 24.5%; p<0.001). 5. Low social support from the "media environment" in turn was "protective" for active behavior, since those who reported low media support were half as likely to be sedentary compared to those with high social support from media environment (27.7% vs. 34.5%; p<0.001). 6. Those who were poorly informed about programs and actions for sport and physical activity were 77% more likely to be inactive compared to those who were well informed (38.6% vs. 24.7%; p<0.001).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Humpel, Owen (2004) Australia	Access to areas for physical activity (beach, lake, facilities) ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of neighborhood safety 2. Neighborhood aesthetics and accessibility 3. Destinations within walking distance from the residence *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 399 respondents: clients from a health insurance organization ***PRIMARY OUTCOMES:*** Neighborhood walking, walking for exercise, walking for pleasure ***MEASURES:*** 1. Neighborhood Environment Walkability Scale [NEWS] (adapted measures on environment attributes including aesthetics, accessibility, safety, and weather) 2. Self-reported survey (walking for transport, exercise, and pleasure, walking frequency, walking duration, postal codes, and sociodemographics) 3. 1996 Australian Bureau of Statistics Census data (coastal and non-coastal locations) ***DATA COLLECTION:*** The survey was sent in the spring. Reported frequency of walking was multiplied by the number of usual minutes, to give an index of estimated minutes of walking each week, for each type of walking. Reliability of the neighborhood walking item had been examined previously. Neighborhood environment attribute items were collected from previous studies and the Neighborhood Environment Walkability Scale items (NEWS-valid instrument), (ICC range 0.73-0.91). The scores of aesthetics, accessibility, safety, and weather were transformed into categorical variables with three levels: low, a less positive perception of the environment; moderate; or a highly positive perception of the environment. A structured query language identified postal areas that intersect the coastline for non-coastal (27%) and coastal (73%) locations. ***LIMITATIONS:*** Causal inferences cannot be made using a cross-sectional study design; survey data was self-reported; there was a low response rate; the sample was from an extremely specified primarily coastal region	Adults 57% Female ***ELIGIBILITY:*** A list of clients aged >40 years from a health insurance organization were eligible for the study. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from the University of Wollongong, the University of Queensland, and the University of New South Wales ***THEORY/ FRAMEWORK:*** Ecologic model of health behavior ***EVIDENCE-BASED:*** Previous Australian studies have found physical activity to be higher among coastal residents, after adjusting for education attainment and other demographic factors. ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** The Carelink, a division of the Australian Health management Group, a registered health benefits organization ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. A higher proportion of those with the most positive perceptions for all four environmental perception categories reported more neighborhood walking (data not shown). 2. Higher proportions of neighborhood walkers were found among those with high perceptions for aesthetics (66.7%; X^2=17.08, p<0.001). 3. Significantly higher proportions of those walking for exercise were found among those with the most positive perceptions for all four environmental perception categories (results not shown). 4. A higher proportion of those with the most positive perceptions for accessibility reported more walking for pleasure (45.2%; X^2=7.28, p<0.05). 5. No significant differences in proportions were found for walking to get from place to place. 6. Participants living in coastal locations (mean [M]=189 minutes) walked significantly more minutes in their neighborhood (F(1,382)=5.10, p<0.05) than did participants in noncoastal locations (M=149 minutes). 7. Participants reporting that a beach/lake was within easy walking distance reported significantly more neighborhood walking minutes (M=224) than did those reporting a beach/lake was not within walking distance (M=139; F(2,379)=11.0, p<0.0001); significantly more exercise walking (M=163 compared to M=100 minutes; F(2,382)=9.72, p<0.001); and significantly more walking for pleasure compared to those perceiving that a beach/lake is not within walking distance (M=33 and M=21, respectively; F(2,380)=3.88, p<0.02). 8. Men with the most positive perceptions about the aesthetic nature of the environment were more than seven times more likely to be high neighborhood walkers (OR=7.43; 95%CI=1.92-28.82; p<0.05). 9. For men, accessibility of facilities for walking demonstrated a negative relationship with neighborhood walking (for high walkers: OR=0.30; 95% CI=0.09-0.91; p<0.05). 10. No evidence of a relationship between safety and neighborhood walking was found for men or women. 11. Men with a high score on aesthetics were nearly four times as likely to walk for exercise (OR=3.86; 95%CI=1.03-14.46; p<0.05). 12. Men who perceived their environment as highly safe for walking were less likely to walk for pleasure (OR=0.22; 95% CI=0.06-0.78; p<0.05). 13. Women with moderately positive perceptions about accessibility were more than three times more likely to walk for pleasure (OR=3.51; 95% CI=1.64-9.15, p<0.01).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Tucker, Irwin (2009) Ontario	Presence of neighborhood recreational opportunities (percentage of park space) ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Land-use mix *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 811 children from 21 geographically diverse schools located in the urbanized areas of London, Ontario Canada ***PRIMARY OUTCOME:*** Physical activity (PA) ***MEASURES:*** 1. Parent questionnaire (child's involvement in organized physical activity or sport, presence of neighborhood recreation facilities, quality of facilities, neighborhood safety, and demographic data) 2. Adapted Previous Day Physical Activity Recall [PD-PAR] (type, frequency, and intensity of physical activity) 3. Geographic Information System [GIS] (participants' geo-coded addresses, land-use mix, density of recreation opportunities, level of neighborhood park coverage) 4. London planning department data/field surveys/ aerial photos (verification for location of schools, parks, and public recreational opportunities) ***DATA COLLECTION:*** Parents/guardians who provided consent for their child's participation were asked to complete a questionnaire. The adapted PD-PAR, a previously validated survey, was completed by students to assess type and intensity (in 30 minute blocks) of physical activity throughout the afternoon and evening of the previous day (3pm-11pm). A distance of 1.6 kilometer was used to define school neighborhoods. Park coverage was calculated in ArcGIS as the percent of public park land divided by the total area of all land within each buffer. Recreational opportunities were defined as all publicly funded recreational facilities. To calculate land use mix, every land parcel within the city of London was classified into 6 broad classes: recreational, agricultural, residential, institutional, industrial and commercial. The total area of each of the land uses was calculated in each buffer. ***LIMITATIONS:*** No causal inferences can be made due to cross-sectional study design; the PD-PAR itself may have inflated activity findings given the 30-minute block structure of the instrument; information was self-reported; study did not measure quality of neighborhood activity opportunities; possible that the 49% of students who volunteered to participate in the study were the most active and therefore not representative of the entire student body.	11-13 year olds Parent demographics 75.3% White, 1.5% Black, 6.6% Latin-American, 5.8% Asian, 8.8% Other, 9 % lower income (sample) ***ELIGIBILITY:*** Parental consent was required. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from the University of Western Ontario, Brescia University College and Middlesex London Health Unit, and the University of Toronto. ***THEORY/ FRAMEWORK:*** Social Cognitive Theory and the Theory of Planned Behavior were included in developing the survey. ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Canadian Institutes of Health Research ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Children with parent-reported recreation facilities in their neighborhood were 13.91 minutes more active after school than children without facilities (p=0.03). 2. Children whose parents reported access to neighborhood recreation facilities were 2.04 (95% CI=1.06-3.92, p=0.03) times more likely to fall within the upper quartile of after school physical activity (>180 minutes per day) than those in the bottom quartile (<60 minutes per day). 3. Students who had 2 or more recreational facilities in their neighborhood were 1.65 times (95% CI=1.09-2.50, p=0.02) more likely to be categorized in the upper quartile for after school physical activity. 4. Children with more than 2 recreation opportunities engaged in 16.49 (standard error 4.97, p=0.004) more minutes of physical activity than those with fewer than 2. 5. Land-use mix and percentage of park coverage were not significant factors influencing physical activity level among London, Ontario adolescents.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Veugelers, Sithole (2008) Nova Scotia, Canada	Neighborhood access to parks, playgrounds and recreational facilities ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Access stores with fruits and vegetables 2. Access to shops (mixed land-use) 3. Perceptions of safety from crime *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 4966 5th grade students from 282 elementary schools ***PRIMARY OUTCOMES:*** Overweight/obesity and sports engagement, consumption of fruits and vegetables, sedentary behavior ***MEASURES:*** 1. Children's height and weight (N=4298) 2. Parental survey (socioeconomic status, neighborhood characteristics, child physical activity) 3. Child Harvard Food Frequency questionnaire (number of daily servings of fruits and vegetables [F&V], percent energy obtained from dietary fat) ***DATA COLLECTION:*** Children's height and weight measurements were collected by research assistants and public health staff. Children's physical activity was based on parental responses and characterized in terms of number of times per week the child engages in sports with/without a coach and number of hours per day child spends playing video games, watching TV or using the computer. Based on the food frequency questionnaire, diet was characterized in terms of 1) number of daily servings of F&V, 2) percent energy obtained through dietary fat, and 3) a diet quality index. ***LIMITATIONS:*** Study participation rates were slightly lower in residential areas with lower average household income, so the authors calculated response weights to overcome potential non-response bias	5-13 year olds 10.8% lower-income (income <20,000) (evaluation sample) ***ELIGIBILITY:*** Children whose parents did not complete the parental survey, or who reported energy intakes less than 500 kcal or greater than 5,000 kcal per day were excluded from data analysis (n=1173). ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from the University of Alberta and the University of Saskatchewan. ***THEORY/ FRAMEWORK:*** Not reported. ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Canadian Population Health Initiative, Canadian Institute of Health Research New Investigator Award, Canada Research Chair in Population Health Scholarship, and Alberta Heritage Foundation for Medical Research Scholarship ***STRATEGIES:*** Not applicable	***OVERWEIGHT/OBESITY:*** 1. Children in neighborhoods with good access to playgrounds and parks were 24% less likely to be overweight (OR=0.76, 95% CI=0.62-0.95) and 29% less likely to be obese (OR=0.71, 95% CI=0.53-0.99) than children in neighborhoods with poor access. 2. Children in neighborhoods with good access to recreational facilities were 29% less likely to be overweight (OR=0.71, 95% CI=0.56-0.90) and 42% less likely to be obese (OR=0.58, 95% CI=0.40-0.84) than children in with poor access. 3. Children in neighborhoods with good access to shops were 26% less likely to be overweight (OR=0.74. 95% CI=0.60-0.91) and 33% less likely to be obese (OR=0.67, 95% CI=0.48-0.94) than children from neighborhoods with poor access to shops. 4. No association between neighborhood safety and overweight and obesity. ***PHYSICAL ACTIVITY:*** 5. Children in neighborhoods with good access to playgrounds, parks and recreational facilities engaged more in sports with a coach than children in neighborhoods with poor access (IR=1.64, 95% CI= 1.38-1.95; IR=1.76, 95% CI= 1.47-2.12, respectively). 6. Children in safe neighborhoods engaged more in sports without a coach than children in unsafe neighborhoods (OR=1.23, 95% CI= 1.04-1.46). ***EATING BEHAVIOR:*** 7. Children in neighborhoods with the best access to shops (highest one-third) reported more consumption of F&V (incremental risk [IR]=1.04, 95% CI= 1.00-1.09), substantially less consumption of dietary fat (IR=0.51, 95% CI= 0.33-0.78), and a higher diet quality index (IR=2.26, 95% CI= 1.09-4.69) in comparison to neighborhoods with the poorest access to shops (lowest one-third). ***SCREEN TIME:*** 8. Children in neighborhoods with good access to playgrounds, parks and recreational facilities spent less time in front of a computer or TV screen than children in neighborhoods with poor access (IR=0.72, 95% CI= 0.62-0.84; IR=0.64, 95% CI= 0.55-0.75, respectively). [no p-values provided]

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Mota, Almeida (2005) Portugal	Access to recreation facilities ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Access to stores and land-use mix 2. Connectivity of streets and neighborhood aesthetics *Complex:* 1. Perceptions of social support	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 1,123 students from 8 secondary schools (grades 7-12). Subjects were grouped into two categories: the non-active group (NPA, n = 534), sedentary and low active youth; and the active group (APA, n = 589), moderately and vigorously active youth. ***PRIMARY OUTCOME:*** Physical activity [PA] ***MEASURES:*** 1. Physical Activity Questionnaire (physical activity including organized, non-organized, times per week, hours per week, competitive sports, intensity level) 2. Environmental Module of the International Physical Activity Prevalence (perceptions of the neighborhood environment including access to stores and recreation facilities, connectivity of streets, neighborhood safety, and aesthetics) ***DATA COLLECTION:*** Physical activity was assessed by a questionnaire with good reliability (ICC: 0.92 to 0.96). A physical activity index was obtained. Individuals were categorized according to their total sum of the points: the sedentary group (0–5); low active group (6–10); moderately active group (11 – 15); and vigorously active group (16– 20). The environmental/neighborhood perception questions were already used in a more comprehensive study and showed good reliability and validity (ICC; 0.36 and 0.79). ***LIMITATIONS:*** Cross-sectional study design and perceived environmental measures did not allow an interpretation for the direction of the causality	14.6 years (±1.6) 52.6% Female ***ELIGIBILITY:*** Consent was obtained from the participants and their parents or guardians before the subjects entered into the study. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from the Research Center in Physical Activity, Health, and Leisure at the University of Poro, Rua Portugal. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Not reported ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. A significantly greater proportion of active participants compared to non-active participants agree with the importance of shop accessibility (55.6 vs. 48.9% respectively, chi-square 4.75, p=0.03), the social environment (75.0 vs. 68.5% respectively, chi square 5.31, p=0.02), neighborhoods having recreational facilities (49.3 vs. 41.6% respectively, chi square 6.19, p=0.01), and aesthetics (50.1 vs. 39.8% respectively, chi square 10.89, p=0.001). 2. Logistic regressions showed that neighbors with recreational facilities (OR = 1.30; 95% CI = 1.00–1.70) and aesthetic domain (OR = 1.30; 95% CI = 1.00–1.71) were predictors of physical activity level (p<0.05). 3. No significant results were found for social environment (OR = 1.16; 95% CI =0.87–1.26).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
De Vries, Bakker (2007) The Netherlands	Access to neighborhood recreation spaces ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Land-use mix and residential density 2. Intersection density 3. Perceptions of neighborhood traffic safety *Complex:* 1. Friendliness of neighborhood	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** Total of 422 children from 20 elementary schools in 10 neighborhoods in six cities in the Netherlands. ***PRIMARY OUTCOME:*** Physical activity ***MEASURES:*** 1. Height and weight (body mass index [BMI]) 2. 7-day activity diary (duration and type of at least moderate intensity physical activity) 3. Neighborhood Walkability Scale [NEWS] (built environment categories; residential vs. commercial space, type of residence, sports/ recreation facilities and playgrounds, green space and water, safe walking and cycling, garbage and dirt, traffic safety, and the activity friendliness of the neighborhood) ***DATA COLLECTION:*** Researchers used previously collected data from the Spatial Planning and Children's Exercise [SPACE] study that collected data from pre- and post-World War II neighborhoods that had variation in type of residences (private and rented properties, low- and high-rise buildings) amount of green space, and presence of at least two elementary schools. Five neighborhoods were chosen from a list of 56 disadvantaged neighborhoods designated by the government for spatial restructuring. All measurements (i.e., physical activity diary, neighborhood observations, and anthropometric measures) were collected between October 2004 and January 2005. Two trained research assistants collected data after school in the neighborhoods using a checklist identifying built environment variables. The checklist is based on the Neighborhood Environment Walkability Scale (test-retest reliability: ICC=0.58-0.80) but was modified to reflect the Dutch built environment. Residential areas were assessed by type and period of construction, socioeconomic status, and age distribution of residents. Neighborhood boundaries were defined by city councils and varied in size and population. ***LIMITATIONS:*** The sample had a low response rate; the final sample varied significantly in age from the original sample; cross-sectional design does not allow for causal relationships to be made; the 10 neighborhoods chosen for study had limited variance	6 to 11 years 8.3 ± 1.4 years (mean) No difference was found in weight, sex, or maternal education between the final and original samples. ***ELIGIBILITY:*** Informed consent was obtained from the parents ***EXPOSURE/ PARTICIPATION:*** Not reported	***LEAD AGENCY:*** Researchers were from the University Medical Center, Amsterdam, the Netherlands and the Department of Physical Activity and Health, TNO Quality of Life, Leiden, Leiden, the Netherlands. ***THEORY/ FRAMEWORK:*** Not reported. ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** This study was supported by a grant from the Dutch Ministry of Health, Welfare, and Sport and the Dutch Ministry of Housing, Spatial Planning, and the Environment. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Children's physical activity was positively associated with the proportion of green space (β=0.865; 95% CI= -0.494, 2.225) and with the frequency of terrace houses (β=1.508; 95% CI=0.726, 2.290), blocks of flats with fewer than 6 stores (β=-1.472; 95%CI=-1.992, -0.953), water (β= 2.662; 95%CI= 1.453, 3.871), cycle tracks (β=2.445; 95%CI= 0.439, 4.451), and 30-km speed zones (β=1.815; 95% CI=0.700, 2.929) in the neighborhood (P<0.05 for all). 2. Children's physical activity was also positively associated with the frequency of parallel parking spaces (β=2.152; 95%CI= 1.408, 2.897) and parking lots (β=3.169; 95% CI=2.055, 4.284) in the neighborhood with the residential density (β=0.009; 95% CI= 0.001, 0.017), and with the general rating of activity-friendliness of neighborhood (β=1.990; 95%CI= 1.255, 2.724) (p<0.05 for all). 3. Children's physical activity was negatively associated with the frequency of staircase entrance flats (3-4 stories without elevator) (β= -1.472; 95% CI= -1.992- -0.953), unoccupied (boarded up) houses (β= -3.080; 95% CI= -4.625, -1.535), dog waste (β= -1.182; 95% CI= -2.104, -0.260), heavy traffic (lorry and bus) (β= -2.356; 95% CI= -3.587, -1.125), intersections in the neighborhood (β= -1.035; 95% CI= -1.825, -0.246), frequency of paved playgrounds (β= -1.372; 95% CI= -2.549, -0.195) and frequency of stripped crossings (β= -1.815; 95% CI -2.854, -0.776) (p<0.05 for all). 4. No significant associations were found for sports and recreation facilities, except for sports fields (p<0.05).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Li, Dibley (2006) China	Access to recreational facilities (playgrounds, gyms, sports equipment, and public open spaces) ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of safety 2. Access to sidewalks 3. Availability of shops 4. Recess and activities at school *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 1787 adolescents attending 30 junior high schools in Xi'an, China ***PRIMARY OUTCOME:*** Sedentary behavior ***MEASURES:*** 1. Height and weight (body mass index [BMI]) 2. Adolescent Physical Activity Recall Questionnaire (time spent in organized or non-organized activities over an average week) 3. Parent Questionnaire (sociodemographic and environmental factors at the community and household levels including recreation facilities in the community, places around the home for children to play, level of residence, safety concerns, parents' involvement with children doing exercise, household facilities for playing games, and family rules for playing games) 4. School Doctor Questionnaire (environmental factors at the school level [availability of playgrounds, gyms, sports equipment, sports meetings, recess exercises, physical education, bicycle riding policies]) ***DATA COLLECTION:*** Questionnaires were completed by adolescents, parents, and school doctors. Trained research staff measured the students' height and weight. Environmental factors used for survey items were based on focus group identification with student, parents, and school doctors. An expert panel reviewed items and studies conducted in Western countries. ***LIMITATIONS:*** Causal inferences cannot be made using cross-sectional data; socially desirable responses may have influenced respondents; questionnaires measuring environmental factors were not validated for use in a Chinese city	Urban, 11-17 year olds ***ELIGIBILITY:*** Participants provided written informed consent. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from the Xi'an Jiaotong University and the University of Newcastle. ***THEORY/ FRAMEWORK:*** A conceptual framework was developed and linked to physical activity in adolescents.. ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Health Consequences of Population Change Program of the Welcome Trust ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Access to public facilities (OR= 1.4, 95% CI=1.0-1.9, p=0.03 for moderate access and OR= 1.7, 95% CI=1.2-2.4, p<0.01 for difficult access) and concerns about neighborhood safety (OR= 2.1, 95% CI=1.1-4.1, p=0.03) were positively associated with inactivity. 2. Lack of recreational facilities was associated with a higher percentage of inactivity in girls (OR=2.4, 95%CI= 1.6-3.5, p<0.001). 3. Perceived unsafe neighborhoods were associated with a higher percentage of inactive adolescents, but the difference was not statistically significant (p=0.08). ***OTHER:*** 4. Lack of extracurricular sports (OR= 1.3, 95% CI= 1.1-1.6, p=0.01) and sports meetings (OR= 2.0, 95% CI=1.4-2.9, p<0.01) were significantly associated with physical inactivity, but physical education was inversely associated with inactivity (OR= 3.1, 95% CI=1.6-6.0, p<0.01 for twice a week and OR= 2.6, 95% CI=1.3-5.1, p=0.01 for three times a week). 5. Lack of recess exercise or sports meetings was associated with higher percentages of inactivity in boys (OR=2.2, 95% CI= 1.2-4.0, p=0.02 and OR=1.5, 95% CI= 1.0-2.2, p=0.05, respectively). 6. For boys, lack of class recess sports (OR= 2.2, 95% CI=1.2-4.0, p=0.02) and sports meetings (OR= 1.5, 95% CI= 1.0-2.2, p=0.05) were associated with low levels of physical activity, and boys at schools forbidding bike riding to school were 60% less likely to be inactive (OR= 0.4, 95% CI= 0.2-0.8, p=0.02). 7. For girls, fewer sports meetings (OR= 1.7, 95% CI= 1.03-2.8, p=0.04) was associated with inactivity. 8. Adolescents living in a house without sidewalks were 30% more likely to be inactive (OR= 1.3, 95% CI= 1.0-1.6, p=0.01). 9. Adolescent boys living in surroundings without vacant fields were 1.7 times (95% CI= 1.2-2.5, p=0.01) more likely to be inactive. 10. Unavailability of video game shops around the home was associated with a higher percentage of inactive boys (OR=1.5, 95% CI= 1.1-2.1, p=0.02). 11. Lack of sidewalks around the house was associated with physical inactivity in girls (OR= 1.5, 95% CI= 1.04-2.0, p=0.03).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Utter, Denny (2006) New Zealand	Accessibility of community-based recreational facilities and physical activity resources ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Neighborhood safety 2. Distance to recreational facilities *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 9,699 high school students ***PRIMARY OUTCOME:*** Physical activity and vigorous activity ***MEASURES:*** 1. Survey (intensity [vigorous and regular vigorous], frequency, and duration of physical activity, motivation for exercise, partners to exercise with, neighborhood safety, perceived opportunities for physical activity [within walking distance from home], age, sex, ethnicity, socioeconomic status) ***DATA COLLECTION:*** Data for the current study was collected as part of Youth2000, the New Zealand national youth health survey completed during 2001. If students chose more than one ethnicity they were assigned an ethnic category following the New Zealand Census Prioritization Method. Participation in vigorous activity was determined by 2 questions about frequency and duration of doing an activity that "makes you sweat or breathe hard or gets your heart rate up." Regular vigorous activity was defined as doing that activity at least 3 days per week for at least 20 minutes. ***LIMITATIONS:*** Access to community facilities was based on participation not objective measurement; survey data was self-reported	13-17 year olds No racial/ethnic demographics given. Participating students were demographically similar to the general New Zealand population of young people aged 13 to 17 years. ***ELIGIBILITY:*** Informed consent was obtained. Eligible participants were in high school. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team from the University of Auckland ***THEORY/ FRAMEWORK:*** Not reported. ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** The Health Research Council of New Zealand ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Students were significantly more likely to engage in regular vigorous activity when they lived within walking distance of the following perceived community features: a park (OR=1.17, 95% CI= 1.1-1.3), a skateboard ramp (OR=1.32, 95% CI= 1.2-1.5), a sports field (OR=1.59, 95% CI= 1.4-1.8), a swimming pool (OR=1.38, 95% CI= 1.2-1.5), a gym (OR=1.44, 95% CI= 1.3-1.6), and a bicycle track (OR=1.44, 95% CI= 1.3-1.6). Note: students could respond yes to more than one facility. 2. Students were significantly less likely to engage in activity if they perceived there was nothing to do where they lived (OR=0.78, 95% CI= 0.7-0.9). 3. Neighborhood safety was positively associated with participation in regular physical activity (OR=1.46, 95% CI= 1.3-1.6).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Fein, Plotnikoff (2004) Canada	Access to convenient facilities and equipment for physical activity ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Neighborhood availability of roads and sidewalks *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** A subsample of 610 participants from four rural high schools in Alberta ***PRIMARY OUTCOME:*** Energy Expenditure ***MEASURES:*** 1. Godin Leisure-Time items (number of exercise bouts, duration of bouts, frequency of exercise) [valid] 2. Questionnaire (perceived availability and importance of environmental resources [e.g., roads and sidewalks], perceived neighborhood safety, physical activity, demographics, psychosocial factors, self-efficacy, influence of peer, family, and friends) ***DATA COLLECTION:*** Availability of environmental resources was assessed by measures of three environmental subscales (the home, neighborhood, and convenient facilities). The instrument was modified to include the school environment as a fourth context for physical activity. Means were calculated for each of the four environmental contexts. Metabolic equivalent value [MET] scores used the mean range for each intensity level of physical activity. The energy expenditure score ranges were adapted from the Seven-day Physical Activity Recall and are valid and reliable for eleventh grade children. Cronbach's alpha for the 5-item self-efficacy scale was 0.75. The energy expenditure was calculated for both moderate and hard intensity activities. Hard physical activity is defined as jogging, jazz dancing, basketball and mountain biking, while moderate activities was defined as walking or bicycling. ***LIMITATIONS:*** Data was self-reported; the sample was convenient and limited generalizability; causation cannot be assumed because the study was cross-sectional; most of the measures used are validated in university-aged students not high school youth	14-18 year olds 62% Female (final sample) There was a relatively even distribution of participants across grades: Grade 9=21% Grade 10=28% Grade 11=26% Grade 12=25% ***ELIGIBILITY:*** Each student provided informed consent. ***EXPOSURE/ PARTICIPATION:*** The populations of these schools comprised 1,595 students. Principals granted access to students allowing 1,291 individuals to be eligible for the study. In total, 914 students completed the questionnaire.	***LEAD AGENCY:*** Researchers were from the University of Toronto and the Alberta Centre for Active Living and Faculty of Physical Education and Recreation ***THEORY/ FRAMEWORK:*** Not reported. ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** The study instrument was initially pilot tested with 30 high school students, it took approximately 45 minutes to complete before the study took place. ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** The Alberta Sport, Recreation, Parks, and Wildlife Foundation ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. The environmental resource scales were positively correlated with energy expenditure (home r=0.16, neighborhood r=0.16, facilities r=0.12, school r=0.15, p<0.01) as were the perceived importance scores (home r=0.22, neighborhood r=0.16, facilities r=0.20m school r=0.27, p<0.01). 2. Perceived importance of the school environment was the only environmental measure showing a significant association (β=0.14, p<0.01) with energy expenditure. 3. Males were strongly associated with energy expenditure (β= -0.24, p<0.05) among respondents reporting high levels of perceived importance in the school environment. ***OTHER:*** 4. Boys (r= -0.17, p<0.01), those in lower grades (r= -0.08, p<0.05), and those with higher peer (r=0.31, p<0.01), family (r=0.23, p<0.01) and physical education teacher relationship (r=0.08, p<0.05) scores were significantly correlated with energy expenditure.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Burton, Turrell (2005) Australia	Access to recreation facilities ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of neighborhood traffic safety 2. Presence of street lights and neighborhood aesthetics *Complex:* 1. Social support in the neighborhood 2. Self-efficacy for physical activity	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 1827 participants from the Australian Commonwealth electoral roll current as of October 1999 ***PRIMARY OUTCOMES:*** Moderate and vigorous intensity physical activity and walking ***MEASURES:*** 1. Questionnaire (frequency, duration, intensity, and types of physical activity, perceived health, cognition, self-efficacy, anticipated benefits, perceived barriers, social support, neighborhood environment, traffic, facilities, and demographic data) ***DATA COLLECTION:*** The mail surveys were delivered in September 2000. The psychological, social, and environmental correlates were measured using a battery of scales that were previously developed using qualitative and quantitative research. The questionnaire had an internal consistency of Cronbach's alpha values ranging from 0.69 to 0.89. The maximum "allowable" time doing any one of the three types of activity was 14 hour per week (h/wk); any greater time was recoded to 14 hours. The maximum "allowable" time across the 3 activities was 28 hours per week, any greater time was recoded to 28 hours. For each type of activity, the total time (in minutes) was multiplied by an intensity value of METs. To measure total activity participation, the time and MET product scores for walking and intensity were summed to provide a total energy expenditure score for the preceding week. ***LIMITATIONS:*** Cross-sectional design does not allow for causal or temporal inferences to be made; questionnaire data is self-reported	Adults, 18-64 years old ***ELIGIBILITY:*** Eligible participants were registered as Australian adult citizens, 18 to 65 years of age living in Brisbane. ***EXPOSURE/ PARTICIPATION:*** Not reported	***LEAD AGENCY:*** Researchers were from the University of Queensland, St. Lucia, Queensland University of Technology, and San Diego State University. ***THEORY/ FRAMEWORK:*** Contemporary ecological models ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** The Queensland University of Technology and the National Heart Foundation of Australia ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Environmental variables contributed the least to vigorous intensity activity. 2. The proportion of unique variation (Nagelkerke R^2) accounted for in walking, moderate-intensity, vigorous-intensity activity, and total physical activity by the environmental correlate group is 0.6, 1.1, 0.4, and 1.2, respectively. 3. Neighborhood aesthetics contributed more to walking (Nagelkerke R^2=0.4%), and the barrier of family obligations contributed more to total and moderate-intensity activity.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Panter, Jones (2008) England	Access to indoor and outdoor facilities for physical activity, access to green space and biking and walking facilities for physical activity ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Residential density and distance to neighborhood facilities 2. Street connectivity and neighborhood aesthetics 3. Perceptions of traffic safety *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 401 respondents from six neighborhoods of varying socio-economic deprivation in Norwich, England. ***PRIMARY OUTCOME:*** Weekly activity ***MEASURES:*** 1. Questionnaire (personal characteristics, neighborhood perceptions of physical activity, access to facilities, parks, and green spaces, residential density, street connectivity, walking/ cycling facilities including sidewalks and trails, aesthetics, and pedestrian traffic safety) 2. Geographical Information System [ArcGIS] (accessibility of leisure facilities and green spaces from respondent's home) 3. Global Positioning System [GPS] (residential location of each respondent) ***DATA COLLECTION:*** Questionnaires were delivered in person to each neighborhood during July 2005. Questionnaires were collected after 3 days. The physical activity section of the questionnaire was adapted from the European Prospective Investigation into Cancer Study Physical Activity Questionnaire (ICC >0.68). Respondents were asked whether they agreed with 16 statements, adapted from the Neighborhood Environmental Walkability Survey (NEWS; ICC ≥0.58), related to neighborhood perceptions. A composite score was produced from the 16 items whereby a high score indicated a more favorable environment. GIS and the Ordnance Survey digital road network were combined to obtain accurate distances to facilities. Shortest road distance between residence and nearest facility was used. All respondents' scores from the NEWS and the questionnaire were calculated and placed into tertiles, with the highest tertiles having the best scores. ***LIMITATIONS:*** Cross sectional study design limits ability to determine causality; differential response rate as less affluent members of the population were under-represented; self-reported data; no information on utilization of facilities, quality or cost of the facilities or duration of physical activity	Adults When compared with 2001 census data for the neighborhoods from which the sample was drawn, respondents tended to be older and contain a greater percentage of females. Respondents also tended to be better educated with only 17.5% of local residents reporting a postgraduate qualification in the census compared with 29.4% of survey respondents. ***ELIGIBILITY:*** Participants were eligible if they were over 16 years of age, able to complete the questionnaire in English and were not precluded from walking because of a disability. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from the University of East Anglia, Norwich, United Kingdom. ***THEORY/ FRAMEWORK:*** Not reported. ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Not reported ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Participants that reported 5 sessions of activity per week, lived closer to sports facilities (mean distance [standard error] = 1268.9 [104.99], p<0.05) and had higher neighborhood walkability scores (mean= 48.10 [0.79]. p<0.01) than their less active counterparts (mean distance= 1479.9 [34.25] and mean walkability scores= 44.46 [0.37]). 2. Individuals that reported 5 or more weekly aerobic activity sessions gave a higher neighborhood walkability score (mean= 46.05 [0.48]) than individuals who did not (mean =43.79 [0.54]), although this association was not apparent when walking alone was considered (p<0.01). opportunity and health policy lost predictive power. 3. Respondents rating their neighborhood as having intermediate or good walkability were over 3 times as likely to report 5 or more sessions of physical activity per week compared to those who gave the lowest rating (OR= 3.14, p=0.02; and OR= 3.04, p=0.03 respectively). 4. Those who lived in the closest tertile to a park or green space were over twice as likely to report five or more sessions of physical activity (OR=2.17, 95% CI= 1.00-4.78, p≤0.05). 5. None of the associations with access to leisure facilities were statistically significant and were generally in a contrary direction to that expected; those living nearest to the facilities generally reported lower levels of activity than those farther away.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Santos, Silva (2008) Portugal	Availability of places to be active ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Access to destinations (land-use mix) and residential density 2. Neighborhood aesthetics *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 7330 adult residents of Azorean islands that participated in the Azorean Physical Activity and Health Study. ***PRIMARY OUTCOME:*** Physical activity (PA) ***MEASURES:*** 1. Anthropometric measures (self-reported weight and height, body mass index [BMI]) 2. International Physical Activity Questionnaire [IPAQ] short form items (intensity and frequency of physical activity) 3. Questionnaire (IPAQ-short form items, Environmental Module of the IPAQ items, and educational level [Portuguese Educational System categorization; 4 yrs, 4-9 yrs, 10-12 yrs and higher education] 4. Environmental Module of the International Physical Activity Prevalence Study questionnaire items (perceptions of residential density, access to destinations [presence and quality of sidewalks, places to bicycle, free or low-cost recreational facilities, land-use diversity, distance to locations], aesthetics, social environment, street connectivity, interpersonal and traffic safety, number of household vehicle, access to public transit, and housing type) ***DATA COLLECTION:*** Data for the present study was taken from results of the Azorean Physical Activity and Health study. Questionnaires were mailed to adult residents of all islands. The questionnaires were sent through school children to their parents or relatives aged ≥ 18 years. The Environmental Module of the International Physical Activity Prevalence Study questionnaire has previously shown good reliability. Total physical activity was expressed as metabolic equivalent [MET] minutes/ week, by weighting the reported min/week, in each activity category, by the MET specific to each category. ***LIMITATIONS:*** BMI and education were categorized by very specific criteria; data relied on self-reported variables; study design was cross sectional; proportions of total variability were low; professional physical activity was not controlled	Adults (18 years and older); Azorean The nature of the sampling design was not random and generalizability is limited. ***ELIGIBILITY:*** Not reported ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from the University of Porto in Portugal. ***THEORY/ FRAMEWORK:*** Not reported. ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Azorean Government - Department of Sports and by the FCT grants (Portuguese Department of Science) ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Women with a positive overall perception of the dimension infrastructures: access to destinations, social environment, and aesthetics were 32.5% (95%CI= 1.150-1.528; p<0.001) more likely to have a moderate physical activity level and 31.9% (95%CI= 1.121-1.551; p<0.001) more likely to have a health enhancing physical activity (HEPA) level. 2. Normal weight women (BMI <25 kg/m2) with a positive overall perception of the dimension infrastructures; access to destinations, social environment, and aesthetics were 44.5% (95%CI= 1.166-1.791; p<0.001) more likely to have moderate physical activity levels, whereas overweight/ obese women (BMI ≥ 25 kg/m2) 22% (95%CI= 1.007-1.478; p<0.05) more likely to have moderate physical activity levels and 34.5% (95%CI= 1.3451.080-1.675; p<0.05) more likely to have HEPA levels. 3. Normal weight men (BMI<25kg/m2) with a positive perception of the dimension infrastructures; access to destinations, social environment, and aesthetics were 51.4% (95% CI= 1.091-2.101; p<0.05) more likely to have moderate physical activity levels.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Humpel, Owen (2004); Humpel, Marshall (2004) Australia	Accessibility of paths, parks, and other walking opportunities ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of traffic safety 2. Access to public transit 3. Perceptions of community convenience to facilities 4. Neighborhood aesthetic quality *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 800 faculty and general staff (n=398 women, n=402 men) of an Australian university ***PRIMARY OUTCOME:*** Physical activity (PA) ***MEASURES:*** 1. Survey (frequency and duration of neighborhood weekly walking, type of walking [e.g., transport] perceptions of neighborhood aesthetics, convenience, access to services, and traffic) 2. International Physical Activity Questionnaire [IPAQ]-short form items (intensity, frequency, and duration of physical activity, total physical activity) 3. Australian Bureau of Statistics 1996 Census data (postal code data, distinguishing coastal from non-coastal regions) ***DATA COLLECTION:*** The results of this study came from a larger study examining a physical activity intervention trial designed to test the efficacy of a Web site delivered self-help physical activity program in a workplace setting. The researchers administered the survey to participants via telephone and used a rating scale of 1-10 to determine participants' perception of their environment; higher scores meant more positive perceptions of the environment. The intra-class correlation and 95% confidence interval for the total sample were 0.92 (0.88-0.95). The survey also combined items from the IPAQ-short form, which has been designed and evaluated for reliability and validity by the International Consensus Group on Physical Activity Measurement. Activity categories could be analyzed separately or summed to gain an overall estimate of the total physical activity performed in one week. ***LIMITATIONS:*** Causality cannot be determined using cross-sectional data; the generalizability of the sample was limited, with the majority having college educations and living in coastal areas, which may also introduce selection bias; specific and detailed environmental characteristics were not accessible through the study design	General, Population (target sample) Ages ranged from 18 to 71 years of age (mean age 43 years), 49.8% women (evaluation sample) Participants did not differ in their responses whether they were part of the original sample or follow-up. ***ELIGIBILITY:*** Not reported ***EXPOSURE/ PARTICIPATION:*** Not reported	***LEAD AGENCY:*** The research team was from the University of Wollongong, the University of Queensland, and the University of New South Wales. ***THEORY/ FRAMEWORK:*** Not reported. ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Heart Foundation of Australia ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Men with moderate aesthetics scores (OR=1.77, 95% CI=1.06-2.97, p<0.05), high aesthetic scores (OR=1.91, 95% CI=1.08-3.37, p<0.05), high scores for convenience (OR=2.20, 95% CI=2.21-3.99, p<0.01) and access (OR=1.98, 95CI=1.12-3.49, p<0.05) were more likely to walk in their neighborhood than individuals with lower scores. 2. Men who increased their perception of aesthetics (OR=2.25, 95% CI= 1.24-4.05, p<0.01) and convenience (OR=1.95, 95% CI=1.10-3.45, p<0.05) were more likely to have increased walking and twice as likely to have increased walking more than 30 minutes (aesthetics; OR=2.0, 95%CI=1.12-3.79, p<0.05, convenience; OR=2.02, 95% CI=1.12-3.65, p<0.05) compared to men with no perception change. Men with increased perceptions of convenience were also 1.98 (95%CI 1.08-3.61; p<0.05) times more likely to have increased their walking to more than 60 minutes. 3. Men with a high convenience score were 1.82 times more likely to engage in total physical activity than those with a lower score (95%CI= 1.02-3.24, p<0.05). 4. Women with increased perceptions of convenience were twice as likely to report increased walking (any increase; OR=2.58; 95%CI=1.46-4.56, p<0.001, increase of 30 minutes or more; OR=2.31, 95% CI= 1.29-4.14, p<0.01, increase of 60 minutes or more; OR=2.01, 95%CI= 1.09-3.70, p<0.05) compared to those who did not positively change perceptions. 5. Participants with a low aesthetic scores at baseline reported a mean relative increase of 0.42 (SD=0.46), whereas those with a high initial scores reported a decrease, with a relative change score of -0.16 (SD=0.18). 6. Participants with low baseline convenience scores reported a mean relative change increase of 0.79 (SD=0.87) and those with high baseline scores reported a relative change decrease of -0.21 (SD=0.22). 7. Participants with low aesthetic scores at baseline reported a mean relative change increase of 0.42 (SD=0.46), whereas those with high scores reported a decrease, with a relative change of -0.16 (SD=0.16). 8. Participants with low baseline convenience scores reported a mean relative change increase of 0.79 (SD=0.87), and those with high scores reported a relative change decrease of -0.21 (SD=0.22). 9. Women with moderate convenience (OR=3.19, 95% CI=1.81-5.59, p<0.001) and access (OR=1.92, 95% CI=1,10-3.37, p<0.05 for walking; total physical activity non-significant, p>0.05) were more likely to report higher levels of walking and higher total physical activity, respectively. Women with a high convenience scores were 3.78 times more likely (95% CI=2.12-6.73, p<0.001) to report the highest levels of neighborhood walking, whereas women with high access scores were 52% less likely (OR=0.48, 95% CI=0.27-0.87, p<0.05) to walk in the neighborhood when compared to those with low scores. 10. Men who perceived traffic as being less of a problem were found to be less likely to have increased their walking across all three outcome variables (any increase in walking; 1 with high initial scores reported a decrease of -0.2 (SD=0.22).

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