INTERVENTION TABLE 19

Traffic Safety

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
United States						
Joshu, Boehmer (2008), Brownson, Baker (2001) United States	Perceptions of traffic barriers (safety) ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Access to places to exercise (e.g., shopping malls, parks, trails) 2. Presence of sidewalks and aesthetic quality of the neighborhood 3. Urban sprawl factors (e.g., residential density) *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 OUTCOMES:*** 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:*** 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 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. ***PHYSICAL ACTIVITY:*** 4. 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. 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. 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). 7. 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%). 8. The presence of sidewalks was the most important neighborhood variable among those with higher incomes (OR = 1.46, 95% CI = 1.08, 1.97). ***OTHER:*** 9. An increase in the number of personal barriers increased the odds of being obese (chi-square for linear trend, p<0.001). 10. Obese individuals in small metropolitan (adjusted OR= 2.3, 95% CI: 1.05-5.2) and micropolitan areas (adjusted OR= 4.8, 95% CI: 1.6-14.2) were more likely to report being self-conscious about their appearance while active. 11. Obesity residents of micropolitan areas were more likely to report no time for activity (adjusted OR= 2.6, 95% CI: 1.1-6.1), and fear of injury (adjusted OR= 4.1, 95% CI: 1.2-14.1) and dislike of exercise (adjusted OR= 3.9, 95% CI: 1.3-11.7) were strongly associated with obesity in rural areas compared with other areas.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
McGinn, Evenson (2007) Mississippi and North Carolina	Perceptions of high-speeds and traffic as barriers for physical activity ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Street connectivity 2. Presence and absence of sidewalks and crosswalks *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 1270 non-institutionalized adults from two communities in Forsyth County, North Carolina and the city of Jackson, Mississippi. ***OUTCOMES:*** Physical activity, including meeting recommendations for leisure activity, outdoor leisure activity, and transportation activity ***MEASURES:*** 1. 1996-2000 Behavioral Risk Factor Surveillance System [BRFSS] data (frequency, duration, and intensity of physical activity including leisure, walking, and transportation activity, 2 most common activities in past month, demographic data) 2. Perceived environment survey (neighborhood perceptions of connectivity, and walkability [high-speed traffic, heavy traffic, lack of cross walks, lack of sidewalks]) 3. Geographic information system [GIS] and U.S. Census Bureau Topologically Integrated Geographic Encoding and Referencing [TIGER] data (buffers [1/2 mile, 1 mile, and 8 mile radius] around participant address [n=1482], street connectivity [e.g., number and type of intersections, census block density], traffic speed and volume, neighborhood population density, crash and AADT locations) 4. 2001 Annual Average Daily Traffic [AADT] counts (24-hour period NC, 48-hour period MS, car counts) 5. University of North Carolina Highway Safety Research Center and North Carolina Department of Motor Vehicles data (1993-2002 public area traffic crashes involving pedestrians or bicyclists) ***DATA COLLECTION:*** Data for this study was collected from January to July 2003 using a random digit dial telephone survey written at an eighth grade reading level. The (BRFSS) walking questions came from the 2001 optional BRFSS module on physical activity. Intensity was derived using sex, age, and published metabolic equivalents of the specific leisure activities reported. Leisure activity was coded into three levels; meets recommendations, insufficiently active, and inactive. A test-retest survey of a sample of 106 survey respondents was conducted to assess the reliability of physical activity measures and perceived environmental measures, which revealed poor agreement. *(continued next page)*	57.0% White, 38.2% Black (evaluation sample) A disproportionate sampling strategy was adopted for the NC sample frame to ensure representation for areas outside of the Winston-Salem metropolitan area within the county. ***ELIGIBILITY:*** Eligible participants had residences in areas that could be geo-coded and reported no health problems or disabilities. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from the University of North Carolina, Chapel Hill and the Albert Einstein 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:*** This study was funded by the American Heart Association. The lead author was also funded, in part, by NIH, NHLBI, and NRSA grants. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** *Both Sites* 1. Perceptions that high-speed traffic, heavy traffic, and lack of sidewalks were a problem in an individual's neighborhood were not associated with any of the physical activity outcomes. 2. Perceiving that there were enough crosswalks in the neighborhood was associated with decreased odds of engaging in any transportation activity (OR=0.7, 95%CI=0.5-1.0, p<0.05 for both sites). *Forsyth County, NC* 3. Individuals in areas with low-traffic speed were more likely to meet recommendations for leisure activity than to be inactive for all three buffer sizes, compared to those living in areas of high-traffic speed (One-Mile; OR=1.7, 95%CI=1.0-2.7, p<0.05, Half-Mile; OR=1.6, 95%CI=1.0-2.6, p<0.05, Eighth-Mile; OR=2.1, 95%CI=1.3-3.4, p<0.05). 4. When examining the eighth mile buffer, individuals in areas with low-traffic volume were more likely to be insufficiently active during leisure physical activity and outdoor leisure activity than to be inactive and engage in any transportation activity (OR=1.6, 95%CI=1.0-2.3, p<0.05, OR=1.4, 95%CI=1.0-2.0, p<0.05, and OR=1.4, 95%CI=1.0-2.1, p<0.05, respectively). 5. Individuals within the one-mile buffer, in areas where there was a low occurrence of crashes were more likely to meet recommendations for leisure physical activity for the one mile and half mile neighborhoods (OR=1.9, 95%CI 1.0-3.4, p<0.05). 6. Individuals with perceptions of walkable destinations present within their neighborhoods were associated with meeting recommendations for walking for any purpose and any transportation activity (OR=1.7, 95%CI= 1.1-2.8, p<0.05). 7. Individuals that perceived the absence of crosswalks as not a barrier for physical activity were associated with decreased odds of being active (OR=0.6, 95%CI=0.4-1.0, p<0.05). 8. Individuals that perceived the absence of sidewalks as not a barrier for physical activity were associated with increased odds of activity particularly when examining insufficiently active versus inactive individuals during outdoor leisure activity (OR=1.4, 95%CI=1.0- 2.1, p<0.05). 9. Those whose half-mile neighborhoods had high connectivity were more likely to be insufficiently active than inactive during outdoor leisure activity (OR=1.5, 95%CI=1.0-2.2, p<0.05). 10. When examining the eighth-mile buffer, neighborhoods with high connectivity were less likely to meet recommendations or to be insufficiently active than to be inactive during leisure activity and for walking for any purpose (meets recommendations; OR=0.7, 95%CI=0.4-1.0, p<0.05, insufficiently inactive; OR=0.7, 95%CI=0.5-1.0, p<0.05, insufficiently inactive; OR=0.7, 95%CI=0.4-1.0, p<0.05). *(continued next page)*

(Continued from previous study)						
		LIMITATIONS: Objective measures may not have matched items related to perceptions; an inability to control self-selection; cross-sectional study design; response rate was not as high as expected				11. Individuals within the one and half mile buffers, in areas with low occurrence of crashes were less likely to engage in any transportation activity compared with those who live in areas with a high occurrence of crashes (OR=0.6; 95%CI 0.4, 1.0; p<0.05 and OR=0.6; 95%CI 0.4, 0.9; p<0.05, respectively). 12. Individuals with perceptions that the absence of crosswalks were not a barrier for physical activity were associated with decreased odds of being active, particularly for being insufficiently active vs. inactive during outdoor leisure activity (OR=0.6, 95% CI= 0.4, 1.0, p<0.05). *Jackson, MS* 13. Those whose one-mile neighborhoods had low-traffic volumes were more likely to not meet recommendations and be insufficiently active than inactive during leisure activity, outdoor leisure activity, or walking for any purpose, with significant associations for being insufficiently active compared to inactive during leisure activity and walking for any purpose (OR=0.5, 95%CI=0.3-1.1 and OR=0.5, 95%CI=0.3-1.0, p<0.05, respectively). 14. No associations were seen between objectively measured speed and street characteristics for any of the outcomes in any of the three neighborhood sizes in Jackson. 15. Individuals perceiving that a lack of crosswalks was not a problem were associated with being insufficiently active rather than inactive for leisure activity and outdoor leisure activity (OR=1.7, 95%CI=1.1-2.6, p<0.05 and OR=1.4, 95%CI=1.0-2.2, p<0.05, respectively). 16. Individuals who did not perceive a lack of crosswalks as a barrier for physical activity had increased odds of being active during leisure activity and outdoor leisure activity (OR=1.8, 95%CI=1.0-3.2, p<0.05 and OR=2.3, 95%CI=1.4-3.9, p<0.05, respectively).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Boehmer, Lovegreen (2006) Arkansas, Missouri, Tennessee	Perceptions of neighborhood traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component* 1. Access to recreational facilities 2. Land-use mix and distance to grocery stores 3. Condition of walking routes including sidewalks and shoulders and neighborhood aesthetics 4. Perceptions of safety from crime and physical disorder 5. Access to fruits and vegetables, and access to grocery stores *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 ***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 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) 8 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 ***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 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. 2. 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= 1.86-4.55, 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. 3. 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). 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=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. 7. 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.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Lee and Vernez-Moudon (2006) Washington	Perceptions of traffic safety in the neighborhood ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Land-use mix and density 2. Sidewalk quality *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 438 Seattle adult residents (final sample was a subset from the Walkable and Bikeable communities) ***OUTCOMES:*** Recreation and transportation walking ***MEASURES:*** 1. Survey (demographic data, transit use, weekly walking and biking, difficulty walking or biking, vehicle miles traveled per month, frequency of walking for transport and recreation, number of cars in household, dogs in household, awareness of the importance of physical activity, the need to walk/bike, knowledge of congestion and air problems, neighborhood perceptions [type of neighborhood, architecture, awareness of neighbors, traffic problems, air pollution]) 2. Geographic Information System (GIS) data (buffer measures [type and intensity of land use/pedestrian and other transportation infrastructure conditions], distance to individual and agglomerations of destinations, and topography) ***DATA COLLECTION:*** Survey data came from a telephone survey conducted as part of the Walkable and Bikeable Communities (WBC) project. The survey was administered in fall of 2002 by a professional survey company. The instrument was developed using validated questions from existing surveys. The raw data used for the GIS analysis came from the county's parcel-level and building level assessor's data, park layer, METRO bus ridership data, and the Puget Sound Regional Council's regional transportation network data (including trails). Environmental variables were measured using a custom-made GIS tool, called Walkable and Bikeable Communities Analyst, developed as part of the WBC project. 11 types of distance agglomerations were included, called Neighborhood Centers (NCs). Variables were measured and ranked by importance VIP (very important) and Non-VIP (not very important). ***LIMITATIONS:*** Cross sectional study design does not allow for causal inferences; self reported data possibly leads to bias; some variables were excluded because of problems with interpretation	Adults, 10% Minority, 90% White, 54% Female,16% age 66 years or older (evaluation sample) ***ELIGIBILITY:*** Eligible participants of the Walkable and Bikeable Communities were at least 18 years of age, had little or no difficulty walking three city blocks, English speaking, and lived at the same address as the database showed and had a working telephone. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from the University of Washington Health Promotion Research Center. ***THEORY/ FRAMEWORK:*** A multi-or trans-disciplinary approach to active living research; the social ecological model; and the Behavioral Model of Environment ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** The survey instrument was pilot tested on 50 random samples drawn from the same sample frame. Interview protocols followed the methods used by Behavioral Risk Factor Surveillance System. ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** Robert Wood Johnson Foundation through the Active Living Research program and the Walkable and Bikeable Communities (WBC) project, funded by Centers for Disease Control and Prevention through the University of Washington Health Promotion Research Center. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** *Objective Correlates of Walking* 1. Route related variables, such as block size, traffic volume, sidewalk, and street trees, did not show a statically significant association with transportation walking; but longer sidewalks was positively associated with recreation walking (frequent walking; OR=1.117, CI: 1.001-1.245, p<0.05). 2. Distance to the closest office and mixed use neighborhood centers for both-walkers (OR=2.591, CI: 1.463-4.587, p<0.01), the recreation walker (OR=2.233, CI: 1.198-3.161, p<0.05), and the transportation walker (OR=2.503, CI: 1.314-4.768, p<0.01) was significant in all models. 4. Area level residential density was found significant in all models for both recreational and transport walkers (OR= 0.135, CI: 0.036-0.511, p<0.01), and independently for the recreation walkers (OR= 0.101, CI; 0.024-0.421, p<0.05), and the transportation walker (OR= 0.186, CI: 0.043-0.798, p<0.05). 5. Parcel-level density (OR=2.740, CI: 1.239-6.056, p<0.05) showed a positive association with the likelihood of walking for both purposes relative to not walking at all. 6. Area based density (OR=0.135, CI: 0.036-0.511, p<0.001) showed a negative association with the likelihood of walking for both purposes relative to not walking at all. 7. Frequent walkers have a 17% decreased odds of walking (OR=0.825, 95% CI= 0.688-0.989, p<0.05) for transportation compared to non-walkers in a sloped environment. 8. Frequent walkers have a 15% increased odds of walking for recreation compared to non-walkers in a sloped environment. 9. Moderate walkers had a 56% decreased odds of perceiving their neighborhood as having a mix or only commercial atmosphere when (OR=0.441, CI: 0.200-0.972, p<0.05) compared to non-walkers. 10. The odds of transportation walking were 1.7 times higher for moderate walkers (OR=1.765, CI: 1.247-2.494, p<0.01) and 2.7 times higher for frequent walkers when compared to non-walkers with increased social support (OR=2.652, CI: 1.673-4.203, p<0.01). 11. Both socio-demographic and physical environmental variables had a stronger association with transportation walking than with recreation walking. The Frequency Models showed the fit of the recreational model (pseudo R-square=0.349) to be much poorer than that of the transportation model (pseudo R-square=0.641). *Environment:* 12. The objectively measured environmental variables captured up to 20% of the variation in the models, whereas the socio-demographic variables including perceived environmental variables, captured about 10% to 40% of the variation depending on the model.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Catlin, Simoes (2003) Missouri	Perceived traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Access to facilities for physical activity (indoor and outdoor, trails, parks) 2. Availability of sidewalks and shoulders 3. Perceived safety from crime *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 2370 adults completing the Missouri Cardiovascular Disease Survey ***PRIMARY OUTCOME:*** Overweight/obesity ***MEASURES:*** 1. Missouri Cardiovascular Disease (MCD) Survey (self-reported weight and height, 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], 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. Body mass index (BMI) was calculated from weight and height data. Community questions asked about sidewalks/ shoulders, walking/biking trails, parks, public outdoor exercise facilities, public indoor exercise facilities, and the availability of fresh fruits and vegetables. Worksite questions assessed access to facilities and equipment for physical activity, time for physical activity, and availability of healthy food choices. A 4-level neighborhood composite variable was computed for perceived community factors. 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. ***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 (evaluation 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. 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: 3.06-2.28) more likely to be overweight, respectively, than individuals who perceived their neighborhood to be safe and pleasant. 2. Employed persons reporting the absence of sidewalks and shoulders were 1.74 times more likely to be overweight (95% CI: 1.26-2.40). 3. The absence of public outdoor exercise facilities was significantly associated with overweight (OR=1.21; 95% CI: 1.00-1.45). 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). 5. Those with 3 negative perceptions were 2.83 times more likely to be overweight (95%CI: 1.53-5.24). 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
Zhu, Lee (2009) Texas	Perceptions of neighborhood traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Access to quality walking route (good condition sidewalks, tree shade, and streetlights) 2. Distance and land-use mix *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 2,695 parents/guardians from 19 of the 74 elementary schools in the Austin Independent School District (AISD) in Austin, Texas. ***PRIMARY OUTCOME:*** Walking behavior ***MEASURES:*** 1. 3-Page Questionnaire [PedsQL] (family information form, sociodemographic data, personal attitude, child's travel mode to school, social and physical environment [parent's perceptions of safety and walkability]) ***DATA COLLECTION:*** This study was conducted in collaboration with the city's Child Safety Program and the Austin Independent School District. The first phase was conducted in April, 2007 and the second phase was conducted in November, 2007. The questionnaire used information gathered from literature and 3 previously validated instruments. Bilingual questionnaires (English and Spanish) were distributed. The PedsQL Family Information Form has adequate reliability and validity. 2 other validated questionnaires with moderate-to-high reliability were used. Sidewalk availability and quality was a factor captured by maintenance, width, buffers from traffic, and no obstructions. ***LIMITATIONS:*** Cross-sectional study design limits causal inferences; study sampling process was not randomized, and a few schools had low response rates; reliability of several survey items is unknown: there is potential non-response bias; the risk of Type I error is present because of the reduced variations resulting from this clustering.	5-12 year olds, Urban and Suburban (evaluation sample) 55.4% Hispanic, 60.3% eligible for free or reduced lunch (2005-2006 Austin Independent School District) ***ELIGIBILITY:*** Not reported ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from the Departments of Architecture and Landscape Architecture and Urban Planning at Texas A&M 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:*** Preparation of this study was supported by a grant from the Robert Wood Johnson Foundation Active Living Research Program. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Parents' safety concerns (range: -2.8 to 2.0) and the need to cross highways or freeways were negative correlates to children's walking behaviors (coefficient= -0.253, OR=0.776, 95% CI= 0.695-0.867, p<0.001; coefficient= -0.485, OR=0.616, 95% CI= 0.422-0.898, p<0.05, respectively). 2. A child was about 4 times more likely to walk if the parent perceived the distance to be close enough for the child to walk (coefficient= 1.390, OR=4.014, 95% CI=3.128-5.150, p<0.001). 3. Children were less likely to walk (coefficient= -1.201, OR=0.301, 95% CI=0.224-0.404, p<0.001) if schools provided bus services. 4. Sidewalk availability and quality (maintenance, width, buffers from traffic, and no obstructions) was not significantly associated with children's walking behaviors. 5. Maintenance, tree shade, quietness, street lighting, and perceived convenience of walking were marginally significantly related to walking (coefficient= 0.108, OR=1.114, 95% CI= 0.991-1.252, p<0.1). 6. The presence of bus stops (coefficient= -0.305, OR=0.737, 95% CI= 0.580-0.936, p<0.05) and certain features such as convenience stores (coefficient= -0.548, OR=0.578, 95% CI= 0.432-0.774, p<0.001) and office buildings (coefficient=-0.536, OR=0.585, 95% CI=0.393-0.872, p<0.05) en route were negative correlates with walking behavior.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Grow, Saelens (2008) Massachusetts, Ohio, California	Perceptions of traffic safety ***INTERVENTION COMPONENTS:*** *Multi-component:* 1. Access to recreational facilities 2. Perceptions of safety from crime 3. Street connectivity *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:*** Walking and bicycling ***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 3.6% Other (evaluation sample) ***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. *(continued next page)*

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						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
Kerr, Rosenberg (2006) Washington	Perceptions of neighborhood traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Diverse land use mix 2. Access to local walking facilities 3. Perceptions of neighborhood safety (crime) 4. Neighborhood aesthetics *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 259 parents in neighborhoods of King County, WA ***PRIMARY OUTCOME:*** Active commuting ***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], one km 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. 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. 2. 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. 3. Parent concerns, neighborhoods aesthetics, and stores within a 20-min 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). 4. 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). 5. A parental concerns scale was most strongly associated with child active commuting (OR=5.2, 95% CI= 2.71-9.96, p<0.05). 6. 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. 7. 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). 8. 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).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
King, Toobert (2006) California, Oregon, Georgia, Rhode Island, Tennessee	Perceptions of neighborhood traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of neighborhood safety from crime 2. Land-use mix and accessibility of stores 3. Alternative routes and street connectivity *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 639 individuals from 5 Behavior Change Consortium (BCC) sites; California (n=94 men and women); Oregon (n=122 post-menopausal women with type 2 diabetes); Georgia (n=255 men and women, African-American); Rhode Island (n=109 participants); Tennessee (n=64 obese, sedentary, lower-income, minority participants). ***PRIMARY OUTCOMES:*** Moderate-intensity and vigorous physical activity, leisure walking, walking for errands ***MEASURES:*** 1. Neighborhood Environment Walkability Scale [NEWS] (perceived environment; residential density, land use mix, access to restaurants and retail stores, street connectivity, walking and cycling facilities, aesthetics, traffic safety, and safety from crime) 2. Community Health Activities Model Program for Seniors (CHAMPS) questionnaire (frequency, intensity, duration of physical activity over past month, meeting national recommendations, walking for errands and leisure, demographic characteristics) ***DATA COLLECTION:*** Data from 5 BCC sites used for the current investigation contributed cross-sectional data on physical activity (3 sites) and the perceived neighborhood environments (all 5 sites). Each site conducted a randomized, controlled trial evaluating one or more interventions aimed at changing single or multiple health behaviors. The NEWS was collected at 6 months post-baseline for Stanford, 12 months post-baseline for Atlanta, and 24-36 months post-baseline for Memphis, Rhode Island, and Oregon (ICC≥0.75). The NEWS has been shown to significantly discriminate among neighborhoods varying in objectively defined levels of walkability. All subscales were calculated as mean across items. The CHAMPS questionnaire is concurrent with the NEW and has been shown to discriminate among groups varying in physical activity levels (ICC 0.62-0.76). ***LIMITATIONS:*** Time point across studies for data collection could not be standardized: the number of variables tested was large: data for questionnaires was self-reported.	Adults, Elderly, African-American, Lower-income (target sample) 55 years and older (Stanford); 18-72 years old (Atlanta); 65 years and older (Rhode Island) 10.6% minorities (California); 3.3% minorities (Oregon); 97.7% minority (Georgia); 1.9% minority (Rhode Island); 100% minority (Tennessee) (evaluation sample) ***ELIGIBILITY:*** Not reported ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers were from Stanford University, Oregon Research Institute, Northeastern University, San Diego University, and the Universities of Michigan, Tennessee, and Rhode Island. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** The National Institutes of Health Behavior Change Consortium (BCC) Initiative, funded health behavior intervention studies between 1999 and 2002, provided data for this study. ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** The current investigation was funded by the Robert Wood Johnson Foundation Active Living Research Program grant. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Seeing stray or loose dogs in one's neighborhood was negatively associated with minutes per week of moderate-intensity or more vigorous physical activity in the Atlanta sample (parameter estimate=-63.2(218), p=0.006, total r^2=6.7) and was negatively associated with hours per week walking for errands at the Memphis site (parameter estimate = -0.27(73), p=0.04, total r^2=26.0). Seeing stray or loose dogs in one's neighborhood was negatively associated with minutes per week of leisurely walking at the Memphis (parameter estimate=-0.45(73), p=0.03, total r^2=13.9) and Atlanta sites (parameter estimate=-0.30(251), p=0.017, total r^2=6.3). 2. Stores within easy walking distance of home was positively associated with minutes per week of walking for errands at the Stanford site (parameter estimate=0.34(93), p=0.048, total r^2=15.6) and minutes per week of leisurely walking at the Atlanta site (parameter estimate=0.25(251), p=0.03, total r^2=6.3). 3. Having many alternative routes when going from place to place was positively associated with minutes per week of walking for errands at the Oregon site (parameter estimate=0.35(121), p=0.02, total r^2=6.6). 4. Seeing or speaking with others when walking in one's neighborhood was positively associated with minutes per week of moderate-and/or-vigorous intensity physical activity at the Stanford (parameter estimate=70.4(93), p=0.009, r^2=13.3) and Atlanta sites (parameter estimate=59.3(218), p=0.029, total r^2=6.7). While seeing or speaking with others when walking in the neighborhood was positively associated with minutes per week of walking for errands at the Stanford (parameter estimate=0.46(93), p=0.02, total r^2=15.6) and Memphis sites (parameter estimate=0.25(73), p=0.05, total r^2=26.0). 5. Living in a neighborhood of mostly detached, single-family homes was positively associated with minutes per week of moderate-and/or-vigorous intensity physical activity at the Oregon site (parameter estimate=139.0(121), p=0.02, total r^2=7.7) and negatively associated with minutes per week of leisurely walking at the Rhode Island site (parameter estimate= -1.1(94), p=0.05, total r^2=11.2). *CHAMPS baseline and intervention;* 6. In Stanford, participants who strongly agreed with "most drivers exceed the posted speed limits while driving in the neighborhood" showed fewer minutes per week of 6-month moderate-intensity or more vigorous physical activity (by approximately 90 minutes or more per week) relative to intervention participants reporting speeding drivers to be less of an issue this interaction effect reached significance (F for interaction term= 3.8, [1, 89], p=0.05). *(continued next page)*

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						7. In Oregon, participants who strongly agreed that their neighborhood was generally safe showed more minutes per week of 24-month moderate-intensity or more vigorous physical activity (by approximately 150 minutes or more per week) relative to intervention participants reporting their neighborhoods as being less safe. 8. In Oregon, the interaction term involving the item that states "the crosswalks in my neighborhood help walkers feel safe crossing busy streets" reached significance [F for interaction term=5.2(1, 1170, p=0.02)]. Participants who strongly agreed with this item showed more minutes per week of 24-month moderate-intensity or more vigorous physical activity (by approximately 100 minutes/week) relative to intervention participants endorsing lower levels of this item. 9. In Oregon, the neighborhood traffic and crime-related safety subscale reached statistical significance (F for interaction term= 5.9[1,117], p=0.016). Participants who strongly agreed that "my neighborhood is safe enough that I would let a 10-year old boy walk around my block alone in the daytime" showed more minutes per week of 24-month moderate-intensity or more vigorous physical activity (by approximately 150 minutes per week) relative to intervention participants reporting lower levels of this item. 10. In Atlanta, the interaction involving a variable of perceived neighborhood safety-the presence of crosswalks in the neighborhood that helped walkers feel safe crossing busy streets-reached statistical significance (F for interaction term=3.1(2,197), p=0.048). Participants randomized to the physical activity intervention involving tailored messages plus telephone follow-up who strongly agreed that "the crosswalks in my neighborhood help walkers feel safe crossing busy streets" showed more minutes per week of 12-month moderate-intensity or more vigorous physical activity (by more than 100 minutes/week) relative to intervention participants reporting lower values on this item.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Weir, Etelson (2006) New York	Perceptions of neighborhood traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of neighborhood safety from crime *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 307parents of children visiting an inner city family health center (intervention group, n=204) and a suburban private pediatric practice (comparison group, n=103) ***PRIMARY OUTCOME:*** Physical activity (PA) ***MEASURES:*** 1. Parent survey (child's physical activity, extent of outside play; anxiety about gangs, crime, aggression by other children, traffic, and general neighborhood safety; child's age and sex; respondent's relationship to the child, level of education, race/ethnicity) ***DATA COLLECTION:*** Parents of 5-10 year old children with a scheduled appointment at the inner city health center between July 28 and October 22, 2004, or at the suburban private practice between October 22, 2004 and February 11, 2005 were invited to complete the questionnaire in English or Spanish. The survey was adapted from previously tested and validated instruments including the Neighborhood Environment Walkability Scale, International Physical Activity Prevalence Study Self-administered Environmental Module and a study about parental perceptions of the local neighborhood. Surveys were distributed to the parent in the examination room by the office staff and were instructed to answer questions about their child falling between the aged of 5 and 10 years. Completed surveys were returned to a drop box in the waiting area. ***LIMITATIONS:*** Data was collected at different times of the year for the inner city (summer and fall) and the suburban site (fall and winter) making weather effects non-equivalent; only two sites (one inner city, one suburban) were used limiting generalizability; data was self-reported; cross-sectional study design limits causal interpretation	Urban, Lower-income, 5-10 year olds (target) >25% children live below the poverty line, 40% of residents are non-English speakers; 76% Hispanic, 11% Black, 5% White, 2% Other, 5% Not answered, mean age= 7.4±1.9 years (Inner city evaluation sample) Primarily middle-class, Caucasian population; 50% White, 16% Hispanic, 17% Black, 7% Other, 10% not answered, mean age= 6.9±1.6 years (Suburban Community evaluation sample) ***ELIGIBILITY:*** Parents of 5-10 year old children with a scheduled appointment at the inner city health center or suburban private practice on certain dates were invited to complete the questionnaire. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The researchers were from New York Medical College and the health centers. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** The authors adjusted the wording and format for the questionnaire based on parents' feedback obtained during pilot testing. ***PROCESS EVALUATION:*** Not applicable	***RESOURCES:*** Not applicable ***FUNDING:*** Health Resources and Services Administration ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. In the inner city population, children's physical activity levels were negatively correlated with parental anxiety about neighborhood safety (r= -0.18, p<0.05, n=188). No correlation was found for suburban children (p=0.35, n=97). ***OTHER:*** 2. In comparison with suburban parents, inner city parents were more likely to worry about their child being threatened by gangs (70% vs. 12%, p<0.001), worry that other children might hurt their child (62%, vs. 14%, p<0.0001), feel that there was no safe play area in their neighborhood (36% vs. 9%, p<0.0001), believe it is dangerous to let a child play outside (58% vs. 8%, p<0.0001), feel that traffic is a problem (60% vs. 27%, p<0.0001), believe that the neighborhood crime rate makes it unsafe to play outdoors (50% vs. 3%, p<0.0001), and feel personally unsafe in their own neighborhood (48% vs. 3%, p<0.0001).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Troped, Saunders (2001) Massachusetts	Perceptions of neighborhood traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Distance to a community rail-trail (Minuteman Bikeway) *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:*** The Arlington Physical Activity and Bikeway Survey was mailed 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 100m. 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. 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). 2. 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. 3. 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). 4. 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). 5. 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).

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Romero, Robinson (2001) California	Neighborhood perceptions of traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Access to parks 2. Neighborhood perceptions of safety from crime *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; Sallis et al., 1996] (duration of child participation in common activities after school). 5. Adapted Hazards Scale [Aneshensel and Sucoff, 1996] (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 [Cuillar et al.] (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. 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 0.76. *(continued next page)*	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 (χ^2=85.84; p<0.001), SES level (χ^2=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. *(continued next page)*	***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 afterschool 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].

(Continued from previous study)						
		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	***EXPOSURE/ PARTICIPATION:*** Not applicable			

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Ainsworth, Wilcox (2003) South Carolina	Perceptions of neighborhood traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Presence and absence of sidewalks and street lighting *Complex:* 1. Neighborhood social support (belonging to community groups)	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 917 African-American women ***PRIMARY OUTCOME:*** Meeting physical activity recommendations ***MEASURES:*** 1. Women and Physical Activity Survey (sociodemographic characteristics, social environment, safety [traffic volume, unattended dogs, crime], lack of sidewalks, access to facilities) 2. 2001 Behavioral Risk Factor Surveillance System (BRFSS) survey items (physical activity module [intensity, recommendations]) ***DATA COLLECTION:*** Data for this study had been collected for the Women and Physical Activity Survey conducted in Sumter County (July 31 - September 25, 2001) and Orangeburg County (April 18 - June 20, 2002), South Carolina. The survey was developed through focus groups held for the Women's Cardiovascular Health Network Project (physical activity: ICC=0.50). Women who reported no participation in either moderate or vigorous physical activity were classified as inactive. Women were classified as meeting current recommendations for moderate or vigorous physical activity if they participated in moderate physical activity at least 5 days per week for at least 30 minutes per day or participated in vigorous physical activity at least 3 days per week for at least 20 minutes per day. All other women were classified as insufficiently active. ***LIMITATIONS:*** Causal inferences cannot be made using cross-sectional data; survey data was self-reported; the sample area was geographically limited; the sample was very specific and may have limited variability and thus generalizability	Adults, African-American, Females (target sample) 20 to 50 years old (evaluation sample) 46.7% African-American,14.0% Adults below poverty level (Sumter County) 60.9% African-American, 19.0% Adults below poverty level (Orangeburg County) ***ELIGIBILITY:*** African-American women aged 20-50 years were eligible for participation. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from the University of South Carolina and the University of North Carolina at Chapel Hill. ***THEORY/ FRAMEWORK:*** Ecological model ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not reported ***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 for Disease Control and Prevention given to the Prevention Research Center at the University of South Carolina, Columbia. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. 34% of respondents reported having light traffic in the neighborhood and approached statistical significance for meeting physical activity recommendations (OR=1.53, CI=1.00-2.34). 2. 22.8% of respondents reported the presence of sidewalks in the neighborhood and were more likely to meet recommendations for physical activity (OR=1.57, CI=1.14-2.17). 3. The most commonly cited reasons for not exercising more were personal barriers, enablers, and motivators, lack of time (36.2%, 34.5%); lack of willpower (15.0%, 10.9%); and being too tired or lacking energy (12.2%, 9.2%). 4. The most commonly cited factors that would get participants to exercise more were more time (24.6%, 23.3%), greater willpower or self-motivation (19.6%, 15.4%), and support from a friend (8.9%, 6.5%). 5. The most commonly cited barriers for physical activity were lack of recreation facilities (18.6%, 15.8%), not enough sidewalks (9.9%, 8.7%), unattended dogs (8.4%, 8.1%), and no street lighting (7.7%, 9.0%). 6. The most commonly cited enablers were building a fitness center nearby (33.5%, 34.6%), providing better street lighting (10.1%, 10.3%), nearby organized exercise groups (11.0%, 6.8%), and more sidewalks (8.7%, 7.2%). 7. There was a statistically significant relationship between seeing people exercise in the neighborhood and (1) having insufficient or recommended levels of physical activity (versus being inactive) (OR=1.63, CI= 1.07-2.48) or (2) meeting recommendations (OR=1.57, CI= 1.16-2.12). 8. Women reporting lower social role strain (social roles score) were more likely to meet recommendations than women with high strain. (mean = 2.93 +/- 0.41, OR=1.49, CI=1.06 – 2.10).

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Voorhees, Young (2003) Virginia	Perceptions of neighborhood traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of neighborhood safety from crime 2. Access to place for physical activity within walking distance *Complex:* 1. Neighborhood social support	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 285 respondents in Fairfax and Arlington counties, and the city of Alexandria in Virginia. ***PRIMARY OUTCOMES:*** 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 convenience 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).

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Hooker, Wilson (2005) South Carolina	Perceptions of neighborhood traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of neighborhood safety from crime and unattended dogs *Complex:* 1. Social environment (neighborhood trust)	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 1165 residents in 21 census tracts (477 African Americans, 688 White adults) ***PRIMARY OUTCOMES:*** Walking behavior and meeting physical activity recommendations ***MEASURES:*** 1. Survey (sociodemographic data, safety [traffic, crime, unattended dogs, streetlight quality, safety of recreational facilities], social support [perceived trust for neighbors], physical activity [recommendations, walking patterns, recreation, exercise, transport]) 2. 2001 Behavioral Risk Factor Surveillance System (BRFSS) items (physical activity module) ***DATA COLLECTION:*** The data used for this study was collected during January and February 2001. A Likert-type scale was used to assess the social and safety related environmental supports for physical activity, with the lower value indicating stronger endorsement. Respondents were told that neighborhood was defined as the area within one half-mile or a 10-minute walk from their home. The test–retest reliability of these measures ranges between r = 0.42 and 0.73 at the neighborhood level. Kappa coefficients have demonstrated modest agreement. Respondents who were regular walkers (at least 150 minutes per week) were compared with respondents who were irregular walkers (including non-walkers). ***LIMITATIONS:*** Survey data was self-reported; data was only collected from African-American and Caucasian participants; causal inferences cannot be made using cross-sectional data; some of the measures chosen demonstrated low to fair validity (k=0.02-0.28); social and safety-related variables used did not represent the full domain of built environmental influences	Adults, Rural (target sample) 18-96 years old, 41% African-American, 59% White, >60% Overweight or obese, >59% Not meeting activity recommendations (evaluation sample) 45% African-American, 55% White (county demographics) A proportion similar to the total population and racial distribution of the population were randomly selected from census tracts to guarantee a balance in the racial profile and the geographic distribution of the study sample. The proportion of African American and white adults in the final sample closely resembled the overall proportion of these adult populations in the county. ***ELIGIBILITY:*** Eligible participants were 18 years old, with listed telephone numbers, who reported themselves as black or white. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The researchers were from the University of South Carolina and San Diego State University. ***THEORY/ FRAMEWORK:*** The ecological model for health ***EVIDENCE-BASED:*** Not reported ***REPLICATION/ ADAPTATION:*** Not applicable ***ADOPTION:*** Not applicable ***IMPLEMENTATION:*** Not applicable ***FORMATIVE EVALUATION:*** Items for the questionnaire were developed from an extensive literature review, expert input, and focus groups conducted with residents living in the county where this study took place. ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** Not applicable ***FUNDING:*** This project was supported by a grant from the Centers for Disease Control and Prevention ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. White adults who reported their neighborhoods as safe were 1.8 times (95% CI, 1.03–3.12, $p < 0.05$), more likely to report meeting the walking recommendation than white adults who reported their neighborhoods as not safe. 2. There were no significant differences in perceptions of social and safety-related environmental supports between African American adults reporting meeting or not meeting physical activity recommendations. 3. There were no significant differences in perceptions of social and safety related environmental supports between African American adults reporting meeting or not meeting walking recommendations. 4. White adults who perceived moderate traffic in their neighborhood were one half as likely to report meeting the walking recommendation compared with white adults who perceived heavy traffic in their neighborhood (moderate traffic OR= 0.52, CI=0.31-0.87, p = 0.002). 5. African American adults reporting that their neighbors were physically active were 2 times more likely to meet physical activity recommendations (OR=1.96, 95% CI=1.19-3.25, p=0.009). 6. White adults reporting that their neighbors were physically active were 2.5 times more likely to walk for at least 150 minutes per week (OR=2.51, 95% CI=1.54-4.08).

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Suminski, Poston (2005) Midwestern United States	Perceptions of neighborhood traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of neighborhood safety from crime 2. Access to parks 3. Access to shops 4. Neighborhood aesthetics *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 474 participants from a large, Midwestern metropolitan area ***PRIMARY OUTCOMES:*** Walking for exercise and for transportation ***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. Neighborhood safety was a composite score using traffic volume and speed, lighting, and crime. Destinations included shops, parks, work, or schools. ***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, and 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 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). 2. 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). 3. 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). 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
Troped, Saunders (2003) Massachusetts	Perceptions heavy traffic in the neighborhood ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Presence of sidewalks and street connectivity 2. Land-use mix *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 413 respondents ***PRIMARY OUTCOME:*** Recreation and transportation physical activity ***MEASURES:*** 1. Arlington Physical Activity and Bikeway Survey (recreation and transport activity, demographic, interpersonal, and environmental variables, self-efficacy, perceptions about presence/absence of neighborhood attributes [e.g., sidewalks]) 2. Monitoring of Trends and determinants in Cardiovascular Disease Optional Study of Physical Activity (MOSPA) survey items (transportation physical activity) 3. Geographic information systems (ArcView GIS) and Topologically Integrated Geographic Encoding Reference (TIGER) system (road network, distance from residence to access point of rail-trail, shortest route) ***DATA COLLECTION:*** Surveys were administered in the fall of 1998. Self-efficacy for exercise was assessed with four, 5-point Likert-scaled items based on a 3-item scale (Sallis et al., 1989). Factor analysis examined validity, all 4 items loaded strongly on one factor 0.73 or higher. Cronbach's alpha for the 4 items was 0.87. Perceived neighborhood safety was assessed with a 5-point Likert-type scale with a higher score indicative of greater safety. Respondents characterized their neighborhood as residential, mixed-residential-commercial, or mostly commercial. Minutes of activity were multiplied by frequency to create a continuous measure of recreational physical activity per week (minutes/week). Minutes of walking or bicycling on an average day were multiplied by 7 (days) to generate minutes of walking and/or bicycling per week. ***LIMITATIONS:*** Survey data was self-reported; study design did not account for self-selection; the sample is fairly homogenous; causal inferences cannot be made with cross-sectional data; survey items for transportation related activity was part of a more general community survey other factors that may have been important correlates were not examined	General population 18 years and older, 51.2 ± 16.8 years of age (average), 93.6% White (evaluation sample) Arlington is a Boston suburb with a mostly well educated (40.4% college degree), Caucasian population (93.9%). The town has a substantially older population with about 18% of residents aged 65 years and older. The sample is not representative of the whole United States but rather populations with similar demographic and geographic variables. ***ELIGIBILITY:*** Registered 1997 Arlington Census town respondents, 18 years and older were eligible. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from Harvard University, the University of South Carolina, and the University of Texas. ***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:*** This study was supported with a mini grant from the Massachusetts Governor's Committee on Physical Fitness and Sports and in-kind support from the Arlington Planning and Community Development Department and the Massachusetts Department of Public Health. ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Participants who reported sidewalks in their neighborhood and heavy traffic also reported a higher level of participation in recreational physical activity (mean [sd]: sidewalks = 138.3[94.4] and heavy traffic = 151.9[168.1], respectively both $p \leq 0.01$). 2. Participants responding "yes" to seeing people exercising (mean [sd]: 148.1[185.6], $p < 0.005$), having enjoyable scenery in the neighborhood (152.7[189.0], $p < 0.005$), or sidewalks (151.1[185.2], $p < 0.05$) had higher levels of transportation physical activity. 3. Enjoyable scenery, presence of sidewalks, and traffic did not show statistically significant independent associations with recreational physical activity. 4. Presence of streetlights (coefficient= 42.07, $p \leq 0.05$), enjoyable scenery (coefficient; 48.94, $p=0.03$), and neighborhood sidewalks (coefficient= 47.75, $p<0.05$) were all positively associated with minutes of transportation physical activity. 5. Distance to a community paved rail-trail showed a negative association with transportation physical activity (coefficient= -54.65, $p \leq 0.05$). 6. In one final model only self-efficacy and self-report of enjoyable neighborhood scenery (coefficient; 59.63, $p \leq 0.01$) remained statistically significant.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Franzini, Elliot (2009) United States	Perceptions of neighborhood traffic ***OTHER INTERVENTION COMPONENTS:*** *Multi-component* 1. Differences in residential density 2. Physical disorder in the neighborhood *Complex* 1. Social support	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 544 Fifth grade students and their primary caregivers from the metropolitan area of 3 cities (Birmingham, Los Angeles, Houston) ***PRIMARY OUTCOME:*** Physical Activity (PA) ***MEASURES:*** 1. Height and weight (body mass index [BMI]) 2. Youth Behavior Survey compiled by the Centers for Disease Control and Prevention (frequency, duration, and intensity of physical activity) 3. Direct observation (neighborhood traffic, physical disorder, residential density) 4. Face-to-face interview with parents (sociodemographic data, neighborhood perceptions of social processes [social cohesion, informal social control, socialization of children, social ties] neighborhood safety) ***DATA COLLECTION:*** Data was collected as part of phase 1 of Healthy Passages, a multisite, community-based study on children's health between May and September of 2003. The child and parent each completed (in English or Spanish) a face to face computer assisted personal interview and an audio computer self-interview with and without the interviewer. Neighborhood data combined physical observations collected by trained observers and parents' neighborhood perceptions. ***LIMITATIONS:*** The study design was cross-sectional which does not allow for causal inferences to be made	5-10 year olds, 76% Minority, 30% Hispanic, 38% Black, 55% Female, 41% Overweight, most lived in urban areas (evaluation sample) ***ELIGIBILITY:*** All 5th grade students enrolled in public schools with at least 25 students in the class, in the 3 cities were included in the study. Written parental consent was required. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** Researchers from the University of Texas, University of California- Los Angeles, RAND Corporation, Children's Hospital Boston, Harvard Medical School, University of Alabama and Centers for Disease Control and Prevention. ***THEORY/ FRAMEWORK:*** Social Determinants of Health and Environmental Health Promotion 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:*** Research was supported by Centers for Disease Control and Prevention cooperative ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. The structural model for the ordinal measure of child obesity (underweight or normal weight, overweight, obese) suggested that neighborhood physical environment had no significant association with activity levels. 2. The structural model for ordinal measures of child obesity suggested that a favorable social environment was positively associated with physical activity (standardized regression coefficient = 0.13, $p<0.05$), which was negatively associated with child obesity (standardized regression coefficient = -0.24, $p<0.05$). 3. A favorable neighborhood social environment was positively associated with overall physical activity ($\beta=0.15$, $t=2.35$), days of vigorous exercise ($\beta= 0.57$, $t=2.90$), days with physical education in school ($\beta=0.39$, $t=4.18$), and favoring free-time m (Note: Neighborhood physical environment was comprised of variables for traffic, density, land-use mix, and physical disorder.)

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Sanderson, Foushee (2003) Alabama	Perceptions of traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component* 1. Perceptions of safety from crime 2. Access to places for physical activity 3. Access to neighborhood destinations within walking distance 4. Presence or absence of sidewalks *Complex* 1. Neighborhood social support and self-efficacy	***DESIGN:*** Non-comparative study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 567 respondents in Greene, Lowndes and Wilcox counties in Alabama ***PRIMARY OUTCOME:*** Physical Activity (PA) ***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). ***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. Women reporting good lighting at night were less likely (OR=0.48, 95% CI= 0.27- 0.88) to report any physical activity. 2. Researchers found no physical environmental variables that were significantly associated with comparison of either activity-level group. ***SOCIAL SUPPORT:*** 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
Motl, Dishman (2005) South Carolina	Neighborhood perceptions of traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component* 1. Perceptions of neighborhood safety and crime 2. Access to local parks, playgrounds and gyms *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 OUTCOME:*** 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 baseline data. 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
International						
Morrison, Thomson (2004) Scotland	Construction of a traffic calming scheme comprised of 5 sets of speed cushions (raised platforms on the road to slow car drivers), two zebra crossings with adjacent railings, and the creation of parking bays. ***OTHER INTERVENTION COMPONENTS:*** *Multi-component :* Not reported *Complex:* Not reported	***DESIGN:*** Before and after study ***DURATION:*** Not reported ***SAMPLE SIZE:*** 185 residents from a deprived urban community in Glasgow, Scotland ***PRIMARY OUTCOMES:*** Walking and cycling ***MEASURES:*** 1. Questionnaire [n=185: 2nd survey] (ease of use of transportation, perceptions of the neighborhood, traffic problems and related safety concerns) 2. SF-36 health survey items [n=117] (physical component summary [PCS] and mental component summary [MCS]) 3. Observations (pedestrian counts) ***DATA COLLECTION:*** Household addresses were obtained from a commercial data company, CACI Inc. Questionnaires were mailed before (first survey) and after (second survey) a traffic calming scheme was built on a main road in a deprived area of Glasgow. The second surveys were sent to responders of the first survey. A market research company conducted before and after pedestrian counts at 3 locations on the affected road on Tuesday, June 27, 2000 and Thursday, June 28, 2001 between 8:00am and 6:00pm. ***LIMITATIONS:*** Low response rates and potential selection bias (men underrepresented, healthier people may have been more likely to respond) were problematic; study asked only about increases (not decreases or no change) in physical activity; study did not control for temporal changes; potential information biases including the tendency for people to report improvements after a major intervention in their neighborhood, either because they feel they ought to or because of recall bias	Lower- income Participants were two-thirds women and older than the local population. ***ELIGIBILITY:*** Not reported ***EXPOSURE/ PARTICIPATION:*** Approximately 2587 households were affected by the traffic calming scheme	***LEAD AGENCY:*** The local government and the researchers were from the MRX Social and Public Health Sciences Unit and the Greater Glasgow NHS Board. ***THEORY/ FRAMEWORK:*** Not reported ***EVIDENCE-BASED:*** Previous studies suggest that traffic calming schemes reduce the number of accidents and road traffic injuries and deaths (systematic reviews), along with improving broader aspects of health and wellbeing (cross-sectional studies). ***REPLICATION/ ADAPTATION:*** Not reported ***ADOPTION:*** Not reported ***IMPLEMENTATION:*** The local government installed the traffic calming features. ***FORMATIVE EVALUATION:*** Not reported ***PROCESS EVALUATION:*** Not reported	***RESOURCES:*** 1. Construction materials 2. Labor ***FUNDING:*** Chief Scientist Office of the Scottish Executive Department of Health. ***STRATEGIES:*** Not reported	***PHYSICAL ACTIVITY:*** 1. According to replies from the 2nd survey, 20% of respondents said that they walked in the area more as a result of the traffic calming scheme (95% CI: 14.1-25.9). 2. A smaller percentage of respondents reported cycling (3.8%, 95% CI: 0.8-6.8) or allowing children to play (11.8%, 95% CI: 6.7-16.9), walk (12.5%, 95%CI: 7.2-17.8), or cycle (11.6%, 95% CI: 6.6-16.6) as a result of the traffic calming scheme. ***USE OF TRAFFIC CALMING AREA:*** 3. The pedestrian counts of children (aged <16 years old) increased at the 1st site (18% increase, 95% CI=15.4-20.6), 2nd site (44.1% increase, 95% CI=40.8-47.4) and 3rd site (40.0% increase, 95% CI=36.9-43.1) from pre to post-intervention. 4. The pedestrian counts of adults (aged 16-60 years) increased at the 1st site (12.3% increase, 95% CI=10.3-14.3), 2nd site (54.9% increase, 95% CI=52.2-57.6) and 3rd site (11.4% increase, 95%CI: 9.6-13.2) from pre to post-intervention. 5. The pedestrian counts of pensioners (aged >60 years) increased at the 1st site (5.9% increase, 95% CI=2.6-9), 2nd site (36.3% increase, 95%CI: 29.3-43.3), but decreased at the 3rd site (53.8% decrease, 95% CI=-48.3-59.3) from pre to post-intervention. ***SAFETY PERCEPTIONS:*** 6. From the 1st to the 2nd surveys, residents perceived speeding traffic (z=-2.72, p=0.007), road safety for cyclists (z=-0.24, p<0.025), road safety for motorists (z=-3.60, p<0.001), crossing the road (z=-2.19, p=0.029), general facilities for pedestrians (z=-2.60, p<0.009), facilities for teens/young people (z=-3.28, p=0.001) and drug dealing and drug taking (z=-4.39, p<0.001) to be less of a problem after the traffic calming scheme was built. ***HEALTH STATUS:*** 7. Based on the SF-36v2, there was a rise in the physical component summary scores between the 1st and 2nd surveys indicating that there was a statistically significant improvement in physical health status. Men had a 10.7 point difference in scores (from 31.3 to 42; 95% CI=7-14.5), while women had a 7.5 difference in scores (from 33.2 to 40.7; 95% CI=4.7-10.21). 8. Physical health status was not significantly different among those who did and did not report walking more as a result of the traffic calming scheme.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
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	Neighborhood perceptions of traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component* 1. Access to transit stations 2. Access to destinations, land-use, road network distance 3. Access to sidewalks 4. Access to recreation destinations 5. Perceptions of neighborhood safety (crime) *Complex* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 1755 participants in Perth, Australia ***PRIMARY OUTCOMES:*** Overweight/obesity, meeting recommendations, physical activity, and walking ***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 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). *(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 were used to frame this study. 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. 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. 6. 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. 7. Respondents using free destinations within and outside (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) the neighborhood were more likely to achieve sufficient levels of vigorous-intensity physical activity than those not using a free recreational destination. 8. Residing within 1500 meters (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. 9. Having a transit station located within 1500 m 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 m 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). 10. 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) *(continued next page)*

(Continued from previous study)						
		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. ***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. For each additional type of destination located within 1500 m 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). 12. 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). 13. Destination mix was not associated with time spent walking for recreation or vigorous physical activity. 14. 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<0.001), and more traffic and busy roads (OR=1.26, 95%CI: 1.01-1.56, p=0.038). 15. 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<0.001) 16. 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). 17. 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). 18. 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=1.37, 95%CI= 0.83-2.25) test for trend p<0.001). 19. 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=0.00), 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). 20. 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 OR=1.49, 95%CI: 0.96-2.33). 21. 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) 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<0.001), 2.79 times higher among those in the high social environmental determinant score category (95%CI: 2-3.9, p<0.001), and 2.13 times higher among those in the high physical environmental determinant score category (95%CI: 1.54-2.94, p<0.001).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Carver, Timperio (2008) Australia	Perceptions of traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component* 1. Perceptions of neighborhood safety *Complex* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 534 children (8-9 years=188; 13-15 years=346) from 19 state primary schools ***PRIMARY OUTCOME:*** Moderate to vigorous physical activity (MVPA) ***MEASURES:*** 1. Questionnaire (perceptions of road safety, incivilities, and personal safety) 2. Accelerometers (physical activity) ***DATA COLLECTION:*** Data from this study was obtained from the 3-year follow-up results of the CLAN (Children Living in Active Neighborhoods) study. Children were recruited in 2001. Adolescents and parents in cohort 1 (5-6 years old; baseline) and cohort 2 (10-12 years old; baseline) were given a questionnaire to fill out. Data collection took place between July and December 2004. Participants were asked to wear an accelerometer for 8 consecutive days, removing only for sleeping, showering and swimming. Mean time per day spent in MVPA was calculated for 4 specific periods on weekdays—before school, after school, evening, and outside school hours—and all day on weekend days. ***LIMITATIONS:*** Exact location for moderate-to-vigorous physical activity is not ascertained; data is self-reported; study design is cross-sectional, which limits causal interpretation	5-18 year olds, No racial/ethnic demographics given. The 19 state primary schools varied in socioeconomic status. A sampling strategy that ensured adequate representation of children from high and low SES families was adopted. ***ELIGIBILITY:*** Eligible children for the CLAN study were enrolled in one of the 19 participating state primary schools during recruitment and consent forms were provided. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from Deakin 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 Health and Medical Research Council ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. For children, there were no significant associations between parents' scores for road safety, incivilities, or personal safety of the child and moderate to vigorous physical activity (MVPA) during the specified periods. 2. A more positive parental perception of personal safety was associated with increased MVPA among boys after school (unadjusted: β=0.978, p=0.024). 3. Increased level of concern among adolescent girls about road safety was negatively associated with girls MVPA during evenings (unadjusted: β=-0.714, p=0.044) and total MVPA outside school hours on weekdays (unadjusted: β=-1.5, p=0.047). 4. For boys, parental agreement that there were traffic-slowing devices in local streets was negatively associated with MVPA before school (β=-6.109, 95% CI, -10.96 to -1.26) [no p-value provided]. 5. Adolescent girls whose parents agreed that there were traffic slowing devices on local streets, engaged in 12 minutes more MVPA on weekend days than those whose parents who did not share this view (unadjusted: β=12.2, p=0.022).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
De Vries, Bakker (2007) The Netherlands	Perceptions of traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Access to neighborhood recreation spaces 2. Intersection density and parking access 3. Land use mix and housing design *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
Carver, Salmon (2005) Australia	Neighborhood perceptions of traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Access to sports facilities 2. Access to convenience stores 3. Neighborhood perceptions of safety from crime/ unattended dogs *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; boys = 172, girls = 175) ***PRIMARY OUTCOMES:*** Walking and cycling behaviors ***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 (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:*** National Health and Medical Research Council, Meat and Livestock Australia, Novo Nordisk, AMP Foundation, and the Raymond E. Purves Foundation ***STRATEGIES:*** Not applicable	***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). *(continued next page)*

(Continued from previous study)						
						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. 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
Harrison, Gemmell (2007) United Kingdom	Perceptions of neighborhood traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of neighborhood safety from crime and vandalism 2. Access to facilities for leisure activities *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:*** Meeting physical activity recommendations ***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 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. 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 (2007) Japan	Perceptions of neighborhood traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of neighborhood safety from crime 2. Street connectivity (alternate routes to locations) 3. Access to parks and trails *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 behavior ***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 applicable	***PHYSICAL ACTIVITY:*** 1. 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). 2.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). 3. 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 time walking in both regions. 4. 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 time walking. 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 time walking. 6. Those who had high scores for "Residents in the neighborhood are friendly" spent significantly more time walking 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
Hume, Timperio (2009) and Timperio, Crawford (2004) Australia	Neighborhood perceptions of traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Access to sports facilities 2. Access to public transportation *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 OUTCOMES:*** Walking and cycling behavior ***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	***BASELINE: 2001*** 1. 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. 2. 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). 3. 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). 4. 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). ***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
Kondo, Lee (2009) Japan	Perceptions of neighborhood traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Residential density and land use mix-diversity 2. Perceptions of neighborhood safety (crime) 3. Street connectivity and aesthetics 4. Access to gymnasiums and fitness facilities *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) and 73 residents were in the Type B region (low residential density, land use mix-diversity, and street connectivity) ***PRIMARY OUTCOMES:*** Walking and cycling behavior ***MEASURES:*** 1. Geographical Information System (GIS) Data (500-m 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 β=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). ***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-km^2 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 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. Mean 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
Craig, Brownson (2002) Canada	Perceptions of traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Urbanization and neighborhood aesthetics *Complex:* 1. Social support in the environment	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** Approximately 296,541 residents from a convenience sample of 27 neighborhoods in Ontario, Quebec, and Alberta ***PRIMARY OUTCOME:*** Walking ***MEASURES:*** 1. 1996 Canadian Census self-administered questionnaire (education, income, mode of transportation, family size) 2. Neighborhood observations (environmental composite score [number of facilities, mix of facilities, accessible to pedestrian, potential to see other people, walking routes, meets pedestrians' needs, connection to transport modes and traffic, amount and variety of stimuli, aesthetics, time and effort, traffic threats, safety from crime, potential for crime]) ***DATA COLLECTION:*** The current study was designed to merge data from two Canadian sources, a neighborhood observational study (27 observations) and the 1996 Canadian Census. Data collectors received two-day training before conducting observations. Ratings were compiled for the neighborhoods using a ten-point Likert-type scale between late fall 1999 and early spring 2000. Observations were taken during the morning and afternoon over both weekday and weekend days. In a small sub-study, the same observers independently coded environmental factors in two or four assigned neighborhoods, which yielded 156 values. 3-level hierarchical linear models estimated inter-rater reliability, correlations ranged from 0.9-1.0. One fifth of the Census respondents received a longer version, including questions on education, income, and usual mode of transportation to work, with the latter including "walking to work" as a distance response category. ***LIMITATIONS:*** Cross-sectional study design does not allow for causal or temporal inferences to be made; distance of destination was not accounted for in the study design	General Population (target population) The observed neighborhoods were known for diversity of urban design, social class, and economic status. ***ELIGIBILITY:*** All citizens, landed immigrants, and nonpermanent residents were eligible to participate. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from the Canadian Fitness and Lifestyle Research Institute, Saint Louis University, and the Cooper Institute for Aerobics Research. ***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 Physical Activity Unit, Health Canada, Government of Canada ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Walking to work was significantly related to the environment score (T-ratio (25) =3.32, p=0.003), with a one-unit increase in the score being associated with a 25-percentage-point increase in the percentage walking to work. 2. The degree of urbanization altered the relationship between the environment score and walking to work (no statistical data) 3. The predicted environment score was lower in both small urban (T-ratio (23) =-3.61, p=0.002; Coefficient; -0.77) and suburban neighborhoods (T-ratio (23) =-4.42, p<0.001; Coefficient=-0.12) than in urban neighborhoods. 4. The environment score was related to the percentage walking to work, controlling for degree of urbanization (T-ratio (23) =2.03, p=0.054; Coefficient=0.02). ***OTHER:*** 5. The environmental factor coefficients ranged from -1.82 to 2.20. Each factor was a significant contributor to the variation of the environment score (mean p=0.10 for "transportation system" and p<0.05 for other factors), except for visual interest and aesthetics. The inclusion of environmental factors (destinations, social dynamics, transportation system, and traffic) reduced the variation in the score by 46%.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Carnegie, Bauman (2002) Australia	Perceptions of neighborhood traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Perceptions of neighborhood safety (dogs barking) 2. Land-use mix 3. Access to open spaces (beaches and parks) 4. Perceptions of the aesthetic environment *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 metabloic equivalent (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 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). 2. 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). 3. 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). 4. 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). 5. The "dogs barking" variable showed no relationship with walking activity nor did the "safety at night" question. 6. 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
Timperio, Salmon (2005) Australia	Safety from traffic ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* Not reported *Complex:* Not reported	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 1210 families of children aged 5-6 years (n=291) and families of children aged 10-12 years (n=919) from 19 state primary schools in high (n=10) and low (n=9) socioeconomic areas in metropolitan Melbourne, Australia ***PRIMARY OUTCOMES:*** Overweight/obesity and physical activity ***MEASURES:*** 1. Height and weight (body mass index [BMI]) 2. Parent and child survey (socio-demographic information, perceptions of neighborhood access [cycle/walking tracks, friend's houses, parks, ovals, playgrounds, the postbox, public transport, school, shops, and sport venues] traffic density, road safety, strangers) 3. 1996 Socio-economic index [Australian Bureau of Statistics] (area-level socioeconomic status by geographical location of the child's school) ***DATA COLLECTION:*** Data for the present study was extracted from a study that surveyed families from July to December 2001. The parent survey was completed at home and the child survey was completed by 10-12 year old children at school. Area-level socioeconomic status was categorized by two locations; eastern (high socioeconomic status) and western (low socioeconomic status) suburbs. ***LIMITATIONS:*** Causal inferences cannot be made using cross-sectional data; low response rates were observed; there may have been some response bias related to self-selection and participation in the study	5-6 year olds and 10-12 year olds ***ELIGIBILITY:*** Only families who provided active consent by returning a signed consent form by the required date were eligible to participate in the study. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from Deakin University and RMIT 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:*** Financial Markets Foundation for Children ***STRATEGIES:*** Not applicable	***OVERWEIGHT/OBESITY:*** 1. None of the neighborhood variables included in unadjusted logistic regression models were associated with being overweight or obese among children 5-6 years old. 2. Children whose parents believed there was heavy traffic in their local streets were 40% more likely to be overweight or obese, compared to other children (OR= 1.4, 95% CI= 1.0-1.8, p≤ 0.05). 3. 10-12 year-old children whose parents were concerned about road safety were almost 4 times as likely as other children to be obese (OR= 3.9, 95% CI= 1.0-15.2, p≤0.05). ***PHYSICAL ACTIVITY:*** 4. Compared to parents of children aged 5-6 years, greater proportions of parents of children aged 10-12 years perceived that their child had access to school (84% vs. 74.7%, p<0.001), bicycle or walking tracks (86.7% vs. 80.6%, p=0.012), friend's houses (88.4% vs. 79.4%, p<0.001), shops (92.1% vs. 83.2%, p<0.001) and sports venues (61.5% vs. 50.0%, p=0.001) within walking distance of home. 5. Compared to parents of older children, greater proportions of parents of younger children reported concern about stranger danger (98.3% vs. 91%, p<0.001), road safety (93.8% vs. 88.7%, p=0.012), lack of street lights or crossing for their child to use (58.3% vs. 49.1%, p=0.006), and the necessity to cross several roads to access play areas (54.3% vs. 43.4%, p=0.001).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Humpel, Owen (2004) and Humpel, Marshall (2004) Australia	Perceptions of traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component* 1. Accessibility of paths, parks, and other walking opportunities 2. Perceptions of access to neighborhood stores 3. Perceptions of access to transit 4. Neighborhood aesthetics *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:*** Walking ***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. Access scores are related to access to services like public transit and shops, while convenience scores deal with opportunities for physical activity in the neighborhood. ***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 were homogenous in their responses regardless of 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:*** *Men* 1. 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; OR=0.40, 95%CI=0.22-0.72, p<0.01, increase of 30 minutes; OR=0.29, 95%CI=0.15-0.54, p<0.001, increase of 60 minutes; OR=0.39, 95%CI= 0.21-0.73, p<0.01). 2. 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), the highest 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. 3. 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. 4. 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). *Women* 5. Increased perceptions that traffic was not a problem were significantly associated with women being 1.76 (95%CI=1.01-3.05, p<0.05) times more likely to have increased their walking for 30 minutes or more. 6. 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) 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. 7. 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. *(continued next page)*

(Continued from previous study)						
						All participants 8. Participants with low baseline scores for traffic as a problem reported a relative change increase of 1.13 (SD=1.83), whereas those with high initial scores reported a decrease of -0.2 (SD=0.22). 9. 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). 10. 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). 11. 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). 12. Participants with low initial access scores reported a mean relative change increase of 0.35 (SD=2.14), and a decrease score of -0.24 (SD=0.24) was reported for those with an initial high score. 13. 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).

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Burton, Turrell (2005) Australia	Perceptions of neighborhood traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Neighborhood aesthetics 2. Access to places for physical activity 3. Access to streetlights (safety) 4. Access to public transit *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:*** Walking, moderate-intensity and vigorous-intensity physical activity, and total physical activity ***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 hours/week; any greater time was recoded to 14 hours. The maximum "allowable" time across the 3 activities was 28 h/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 metabloic equivalents (MET). 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. The environmental scale was developed from a battery of items, which led to the inclusion in multiple strategies. ***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 (physical features, aesthetic features, traffic, facilities) 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
Hume, Salmon (2007) Australia	Perceptions of traffic safety ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Access to neighborhood destinations 2. Perceptions of neighborhood safety 3. Street connectivity *Complex:* 1. Social support (presence of friends in the area)	***DESIGN:*** Cross-sectional study ***DURATION:*** Not applicable ***SAMPLE SIZE:*** 280 children attending 3 elementary schools in Melbourne, Australia ***PRIMARY OUTCOME:*** Walking and cycling behavior ***MEASURES:*** 1. Accelerometers (physical activity and physical activity related energy expenditure) 2. Student questionnaire (frequency of dog walking, walking for exercise, walking to and from school during the past month, access to 15 neighborhood destinations, perceptions of aesthetic and safety characteristics of neighborhood environment, perception of the social neighborhood environment, presence of friends in the area, friends living within walking or cycling distance, knowledge of all neighborhoods and people in the area, presence of multiple children to play with, other children as play companions) ***DATA COLLECTION:*** This data is part of the baseline assessment for a randomized controlled trial. Two trained researchers fitted accelerometers, which were worn for 8 consecutive days. Data was recorded in 1-minute periods. Each participant completed a questionnaire at school during class time under the supervision of 2 teachers and 2 research staff. Self-reported physical activity and environment measures were pilot-tested in a small sample of 38 children of a similar age to those in the study sample. Reliability was rated for all three walking measures (ICC=0.69-0.95), overall walking frequency (ICC=0.86), and access to neighborhood destinations (Cronbach's alpha=0.91, ICC=0.84). Percent agreement was rated for access to neighborhoods (76-100%), perceptions of aesthetic and safety characteristics of the environment (86-100%), and children's perception of the social environment in their neighborhood (68%-100%). ***LIMITATIONS:*** Cross sectional study design; self-reported data; children's awareness of destinations may be dependent on previous access; the neighborhood was fairly homogenous	10-year-olds Lower income; 49% Boys (evaluation sample) ***ELIGIBILITY:*** All children in grade 5 in the schools were invited to participate. Parents had to provide active consent. Children had to maintain enrollment between recruitment and testing. ***EXPOSURE/ PARTICIPATION:*** Not applicable	***LEAD AGENCY:*** The research team was from Deakin 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:*** Not reported ***STRATEGIES:*** Not applicable	***PHYSICAL ACTIVITY:*** 1. Among girls, the perceptions of nice houses in the neighborhood (β=2.98, p=0.003); lots of neighborhood graffiti (β=2.59, p=0.04); nice neighborhood house gardens (β=1.91, p=0.03); safety in the neighborhood for walking/ cycling to school (β=2.78, p=0.03); and safety when crossing the road (β=1.99, p=0.07); having an easily walkable/ cyclable neighborhood (β=2,75, p=0.0001); knowing lots of people in the area (β=2.61, p=0.05); and having lots of friends in the area (p=0.08) were significantly positively associated with walking frequency. Easy to walk/cycle and lots of graffiti remained significantly associated with walking frequency in the multiple regression model (both p<0.05). 2. Chi square analyses showed that significantly more boys than girls reported access to a walking or cycling track in their neighborhood (94% vs. 85%; $\chi^2[1]=5.59$, p=0.02), lots of graffiti (27% vs. 15%; $\chi^2[1]=5.34$, p=0.02), that it is safe to walk or cycle to school (71% vs. 56%; $\chi^2[1]=5.79$, p=0.02), and that they knew all their neighbors quite well (73% vs. 61%; $\chi^2[1]=3.86$, p=0.05). In contrast, more girls than boys reported that they were worried about strangers in their neighborhood (45% vs. 30%; $\chi^2[1] =6.06$, p=0.01). 3. Among boys, access to the total number of neighborhood destinations (β=0.35, p=0.03), knowing their neighbors well (β=2.13, p=0.04), and perceiving that it was a safe neighborhood to walk/cycle to school (β=-1.92, p=0.07) were positively associated with weekly walking frequency. Total number of accessible destinations score remained significantly positively associated with walking frequency in the multiple regression model (p<0.05). 4. Perceiving lots of litter and rubbish in the neighborhood (β=51.28, p=0.02), lots of children in the neighborhood to play with (β=110.51, p=0.03), friends within walking/cycling distance of home (β=104.79, p= 0.04), and the overall neighborhood social environment scale (β=31.68, p=0.006) were significantly associated with overall physical activity among boys. 5. For boys' overall physical activity, having friends living in walking/cycling distance and presence of lots of litter (both p<0.05) remained significantly positively associated in the multiple regression model.

Source	Intervention Components	Study Design and Execution	Reach	Adoption, Implementation and Process Evaluation	Enforcement/ Sustainability	Impacts and Outcomes
Panter, Jones (2008) England	Perceptions of safety (traffic) ***OTHER INTERVENTION COMPONENTS:*** *Multi-component:* 1. Residential density and neighborhood aesthetics 2. Access to indoor and outdoor facilities for physical activity, access to green space and biking and walking facilities for physical activity 3. Street connectivity *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 and weekly aerobic 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). 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.

REFERENCES

Ainsworth, B.E., Wilcox, S., Thompson, W. W., Richter, D. L., & Henderson, K. A. (2003). Personal, social, and physical environmental correlates of physical activity in African-American women in South Carolina. *American Journal of Preventive Medicine*. 25(3 Suppl 1):23-9.

Boehmer, T.K., Lovegreen, S.L., Haire-Joshu, D., and Brownson, R. (2006). "What Constitutes an Obesogenic Environment in Rural Communities?" *The Science of Health Promotion*. 20(6): 411-421.

Brownson, R.C., Baker, E.A., Housemann, R.A., Brennan, L.K., Bacak, S.J. (2001). Environmental and policy determinants of physical activity in the United States. *American Journal of Public Health*. 91(12):1995-2003.

Burton, N.W., Turrell, G., Oldenburg, B., and Sallis, J. (2005). The Relative Contributions of Psychological, Social, and Environmental Variables to Explain Participation in Walking, Moderate-, and Vigorous-Intensity Leisure-Time Physical Activity. *Journal of Physical Activity and Health*. 2: 181-196.

Carnegie, M.A., Bauman, A., Marshall, A. L., Mohsin, M., Westley-Wise, V., & Booth, M. L. (2002). Perceptions of the physical environment, stage of change for physical activity, and walking among Australian adults. *Research Quarterly for Exercise and Sport*. 73(2):146-55.

Carver, A., Salmon, J., Campbell, K., Baur, L., Garnett, S., Crawford, D. (2005). How Do Perceptions of Local Neighborhood Relate to Adolescents' Walking and Cycling? *The Science of Health Promotion*. 20(2):139-147.

Carver, A., Timperio, A., Crawford, D. (2008). Perceptions of neighborhood safety and physical activity among youth: the CLAN study. *Journal of Physical Activity and Health*. 5(3):430-44.

Craig, C.L., Brownson, R. C., Cragg, S. E., & Dunn, A.L. (2002). Exploring the effect of the environment on physical activity: A study examining walking to work. *American Journal of Preventive Medicine*. 23(2S):36-43.

Catlin TK, Simoes, E. J., & Brownson, R. C. Environmental and policy factors associated with overweight among adults in Missouri. *American Journal of Health Promotion*. 17(4):249-58.

De Vries, S.I., Bakker, I., van Mechelen, W., Hopman-Rock, M. (2007). Determinants of Activity-friendly Neighborhoods for Children: Results from the SPACE Study. *American Journal of Health Promotion*. 21(4):312-316.

Franzini, L., Elliott, M. N., Cuccaro, P., Schuster, M., Gilliland, M. J., Grunbaum, J. A., Franklin, F., & Tortolero, S. R. (2009).Influences of physical and social neighborhood environments on children's physical activity and obesity.*American Journal of Public Health*.99(2):271-8.

Giles-Corti, B., & Donovan, R. J. (2003). Relative influences of individual, social environmental, and physical environmental correlates of walking. *American Journal of Public Health*. 93(9):1583-9.

Giles-Corti, B., Macintyre, S., Clarkson, J. P., Pikora, T., & Donovan, R. J. (2003). Environmental and lifestyle factors associated with overweight and obesity in Perth, Australia. *American Journal of Health Promotion*. 18(1):93-102.

Giles-Corti, B., & Donovan, R. J. (2002). The relative influence of individual, social and physical environment determinants of physical activity. *Social Science and Medicine*. 54(12):1793-812.

Giles-Corti, B., & Donovan, R. J. (2002). Socioeconomic status differences in recreational physical activity levels and real and perceived access to a supportive physical environment. *Preventive Medicine*. 35(6):601-11.

Grow, H.M., Saelens, B.E., Kerr, J., Durant, N.H., Norman, G.J., Sallis, J.F. (2008). Where are youth active? Roles of proximity, active transport, and built environment. *Medicine and Science in Sports and Exercise*. 40(12):2071-9.

Harrison, R.A., Gemmell, I., & Heller, R. F. (2007). The population effect of crime and neighbourhood on physical activity: an analysis of 15,461 adults. *Journal of Epidemiology and Community Health*. 61(1):34-9.

Hooker, S.P., Wilson, D. K., Griffin, S. F., & Ainsworth, B. E. (2005). Perceptions of environmental supports for physical activity in African American and white adults in a rural county in South Carolina. *Preventing Chronic Disease*. 2(4):A11.

Hume, C., Salmon, J., & Ball, K. (2007). Associations of children's perceived neighborhood environments with walking and physical activity. *American Journal of Health Promotion*. 21(3):201-7.

Hume, C., Timperio, A., Salmon, J., Carver, A., Corti-Giles, B., & Crawford, D. (2009). Walking and cycling to school: predictors of increases among children and adolescents. *American Journal of Preventive Medicine*. 36(3):195-200.

Humpel, N., A. L. Marshall, et al. (2004). "Changes in neighborhood walking are related to changes in perceptions of environmental attributes." Ann Behav Med 27(1): 60-7.

Humpel, N., Owen, N., Leslie, E., Marshall, A.L., Bauman, A.E., Sallis, J.F. (2004). Associations of location and perceived environmental attributes with walking in neighborhoods. *American Journal of Health Promotion*. 18(3):239-42.

Joshu, C.E., Boehmer, T.K., Brownson, R.C., Ewing, R. (2008). Personal, neighbourhood and urban factors associated with obesity in the United States. *Journal of Epidemiology and Community Health*. 62(3):202-8.

Kerr, J., Rosenberg, D., Sallis, J. F., Saelens, B. E., Frank, L. D., & Conway, T. L. (2006). Active commuting to school: Associations with environment and parental concerns. *Medicine and Science in Sports and Exercise*. 38(4):787-94.

King, A.C., Toobert, D., Ahn, D., Resnicow, K., Coday, M., Riebe, D., Garber, C.E., Hurtz, S., Morton, J., Sallis, J.F. Perceived Environments as Physical Activity Correlates and Moderators of Intervention in Five Studies. *American Journal of Health Promotion* 2006;21(1):24-35.

Kondo, K., Lee, J.S., Kawakubo, K., Kataoka, Y., Asami, Y., Mori, K., Umezaki, M., Yamauchi, T., Takagi, H., Sunagawa, H., Akabayashi, A. (2009). Association between daily physical activity and neighborhood environments. *Environmental Health and Preventative Medicine*. 14:196-206.

Lee, J.S., Kawakubo, K., Kohri, S., Tsujii, H., Mori, K., & Akabayashi, A. (2007). Association between Resident's Perception of the Neighborhood's Environments and Walking Time in Objectively Different Regions. *Environmental Health and Preventative Medicine*. 12.

Lee, C. and Moudon, A.V. (2006). Correlates of Walking for Transportation or Recreation Purposes. *Journal of Physical Activity and Health*. 3(Suppl. 1): S77-S98.

McCormack, G., Giles-Corti, B., & Bulsara, M. (2008). The relationship between destination proximity, destination mix and physical activity behaviors. *Preventive Medicine*. 46:33-40.

McCormack, G.R., Giles-Corti, B., & Bulsara, M. (2007). Correlates of using neighborhood recreational destinations in physically active respondents. *Journal of Physical Activity and Health*. 4(1):39-53.

McGinn, A.P., Evenson, K.R., Herring, A.H., Huston, S.L., and Rodriguez, D.A. (2007). "Exploring Associations between Physical Activity and Perceived and Objective Measures of the Built Environment." *Journal of Urban Health*. 84(2): 162-183.

Morrison, D.S., Thomson, H., and Petticrew, M. (2004). "Evaluation of the health effects of a neighbourhood traffic calming scheme." *Journal of Epidemiology and Community Health*. 58(10): 837-40.

Motl, R. W., Dishman, R. K., Ward, D. S., Saunders, R. P., Dowda, M., Felton, G., & Pate, R. R. (2005). Perceived physical environment and physical activity across one year among adolescent girls: self-efficacy as a possible mediator? *Journal of Adolescent Health*. 37(5): 403-8.

Panter, J.R. and Jones, A.P. (2008). Associations between physical activity, perceptions of the neighbourhood environment and access to facilities in an English city. *Social Science Medicine*. 67(11): 1917-23.

Romero, A.J., Robinson, T. N., Kraemer, H. C., Erickson, S. J., Haydel, K. F., Mendoza, F., & Killen, J. D. (2001). Are perceived neighborhood hazards a barrier to physical activity in children? *Archives of Pediatric and Adolescent Medicine*. 155(10):1143-8.

Suminski, R.R., Poston, W. S., Petosa, R. L., Stevens, E., & Katzenmoyer, L. M. (2005). Features of the neighborhood environment and walking by U.S. adults. *American Journal of Preventive Medicine*. 28(2):149-55.

Timperio, A., Salmon, J., Telford, A., Crawford, D. (2005). Perceptions of local neighbourhood environments and their relationship to childhood overweight and obesity. *International Journal of Obesity (London)*. 29(2):170-5.

Timperio, A., Crawford D, Telford A, Salmon, J. (2004). Perceptions about the local neighborhood and walking and cycling among children. *Preventive Medicine*. 38(1):39-47.

Troped, P.J., Saunders, R. P., Pate, R. R., Reininger, B., & Addy, C. L. (2003). Correlates of recreational and transportation physical activity among adults in a New England community. *Preventive Medicine*. 37(4):304-10.

Troped, P.J., Saunders, R.P., Pate, R.R., Reininger, B., Ureda, J.R., Thompson, S.J. (2001). Associations between Self-Reported and Objective Physical Environmental Factors and Use of a Community Rail-Trail. *Preventive Medicine*. 32:191-200.

Voorhees, C.C., & Young, D. R. (2003). Personal, social, and physical environmental correlates of physical activity levels in urban Latinas. *American Journal of Preventive Medicine*. 25(3Si):61-68.

Weinstein Agrawal, A., Schlossberg, M., and Irvin, K. (2008). How Far, by Which Route and Why? A Spatial Analysis of Pedestrian Preference. *Journal of Urban Design*. 13(1): 81-98.

Weir, L.A., Etelson, D., & Brand, D. A.(2006). Parents' perceptions of neighborhood safety and children's physical activity. *Preventive Medicine*. 43(3):212-7.

Zhu X, & Lee, C. (2009). Correlates of Walking to School and Implications for Public Policies: Survey Results from Parents of Elementary School Children in Austin, Texas. *Journal of Public Health Policy*. 30:S177-S202.