Physical Activity and the Environment

Evidence Reviews – Appendix 6

Characteristics of all included studies

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Study Author, Date	Study Type (author's description)	Population group	Intervention details
Adams and Cavill 2015	Uncontrolled before and after study	Count: whole community. Survey: over 16 only. UK, multiple cities.	Fitter for Walking (FFW). Improvements to footpath access, safe crossings, lighting, and aesthetics
Bergman et al 2010	Controlled before and after study	18 to 74 years old only. Sweden, Stockholm.	Congestion road tax
Bjornskau et al 2012	Controlled before and after study	18 and over only. Cyclists, pedestrians, and car drivers. Norway, Oslo.	Counter-flow cycling permitted, cycle lanes installed
Boarnet et al 2013	Controlled before and after study (experimental methods)	Travel documenting: household members 12 years and over. GPS: 18 and over only. USA, Los Angeles.	Introduction of a light rail line
Bohn-Goldbaum 2013	Controlled before and after study (quasi-experimental design)	Children aged 2 - 12 years. Australia, Sydney.	Park improvements. Upgrading paths, improving lighting, increased greenery and park furniture
Brockman and Fox 2011	Uncontrolled before and after study (analysis of a repeated bi-annual travel survey in a workplace setting)	Employees (not explicitly adults). UK, Bristol.	Transport Plan (reduced parking spaces and increased charges; cycle facilities, subsidised cycle purchase scheme, car share scheme, free bus service)
Brown and Werner 2007	Uncontrolled observational before and after study (pre-test-post-test design)	18 and over only. USA, Utah.	New light-rail stop
Brown and Werner 2009	Uncontrolled before and after study (natural experiment)	Adults in population. USA, Utah.	New stop on an existing light rail line
Brown et al 2015	Controlled before and after study	18 and over only. Residents within 2km of intervention. USA, Utah.	Extension of a light-rail line, bike lane and improved pavements
Brown et al 2016	Controlled before and after study	18 and over only, not pregnant, English or Spanish speaking, "could walk for a few blocks". USA, Utah.	New light rail, bike lanes, and improved pavements.

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Chomitz et al 2012	Uncontrolled retrospective mixed-methods before and after study (retrospective mixed-methods design)	Middle- and high school students and adults. USA, Massachusetts.	Active Living by Design: improving pedestrian safety; opening and renovating parks, providing bike racks, extending walking path etc.
Christian et al 2013	Controlled before and after study (natural experiment)	Over 18 only. With English proficiency. Australia, Perth.	Residential Environments Project (RESIDE). Designed neighbourhood.
Clark et al 2014	Controlled before and after study (quasi experimental control design)	All trail users (adults and children). USA, Southern Nevada.	Behavioural: marketing campaign. Environmental: development of trails
Cohen et al 2009	Controlled before and after study	Observation: whole population. Survey: 18 or over only. USA, California.	Improvements to five parks including new gymnasiums, landscaping, improvements to picnic areas etc. Community involvement
Cohen et al 2014	Controlled study (Quasi-experimental post-only comparison)	Whole population of park users. USA, Los Angeles.	3 new "pocket park" spaces created from vacant lots etc.
Cohen et al 2015	Mixed method controlled before and after study	Observation: whole population of park users. Survey: 18 and over only. USA, San Francisco.	Park improvements including new play equipment, landscaping and ground surfaces etc. Community involvement
Collins and Agarwal 2014	Uncontrolled before and after study (longitudinal)	Employees (not explicitly adults). Canada, Ontario.	Transit Redevelopment Plan: three new public transit routes to affect commuter habits in Ontario
Coulson et al 2011	Qualitative focus group study (Case study observational design)	All residents (adults and children). UK, Bristol.	Extension of cycle network into neighbourhood (partial completion); traffic calming and pavement free surfaces
Department for Transport 2010	Benefit-cost analysis	6 Cycling Demonstration Towns. UK, multiple cities.	Cycling Demonstration Town programme
D'Haese et al 2015	Controlled before and after study	School children. Belgium, Ghent.	Play streets offering safe, car-free areas near homes

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Dill et al 2014	Controlled before and after study (natural experimental study)	Adults with a child (5-17yrs) with cycling ability. USA, Oregon.	Bicycle boulevard installation on 8 street segments
Droomers et al 2016	Controlled before and after study (quasi-experimental study)	Adult residents. Netherlands, multiple.	Green interventions in 24 neighbourhoods: including new or refurbished public parks, playground landscaping etc.
Dunton et al 2012	Controlled before and after study (quasi experimental study)	Children 9-13 years old taking part in Healthy PLACES trial. USA, California.	Smart growth (SG) neighbourhood . New neighbourhood with walking distance shops and schools
Fitzhugh et al 2010	Controlled before and after study (quasi-experimental research design with multiple controls)	Children and adult users of park. USA, Tennessee.	Pedestrian infrastructure
Foley et al 2017	Controlled before and after study (natural experiment)	Adults in population. UK, Glasgow.	Extension of existing motorway
Gidlow et al 2010	Uncontrolled before and after study (single site pre-post test study design)	Survey: 16 years or older. Focus groups: Adults and youth. Direct observation: all ages. UK, Stoke on Trent.	Park improvements
Goodman et al 2013a	Uncontrolled before and after study (cohort design)	18 and over only. UK, multiple.	Connect2. traffic free routes for walking and cycling. Traffic free bridge; creation of boardwalk
Goodman et al 2013b	Controlled before and after study (Longitudinal, controlled natural experimental study)	16 - 74 yrs only. UK, multiple.	Environmental and behaviour change ("3:1 ratio") cycle lanes and parking, training and promotion.
Goodman et al 2014	Observational before and after study (cohort design)	18 and over only. UK, multiple.	Connect2. traffic free routes for walking and cycling. Traffic free bridge; creation of boardwalk
Gustat et al 2012	Controlled before and after study (serial cross-sectional study design community based participatory research)	18-70 years only. USA, New Orleans.	Installation of walking path

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Heinen et al 2015	Uncontrolled before and after study (Quasi-experimental analysis nested in cohort study)	18 and over only. UK, Cambridge.	Cambridgeshire Guided Busway with a path for walking and cycling
Hendricks et al 2009	Uncontrolled observational before and after study	Elementary school children (Kindergarten to grade 6); working age adults. USA, Michigan.	SRTS. Adults: Behavioural: bike to work days; worksite health promotion programmes. Environmental: lockers, bike racks, company bike rental scheme. Michigan Prisoner Re-entry Initiative: trained new parolees to fit and maintain a bike etc.
Hoelscher et al 2016	Controlled before and after study	School children. USA, Texas.	Behavioural (local program development: education, encouragement etc.). Environmental (pavements, road crossings). Community involvement.
Hunter et al 2009	Uncontrolled before and after study	All ages. Users of cycle lanes. USA, Florida.	Introduction of 2 new cycle lanes
Jones et al 2013	Qualitative participant observation	18 and over only. Users of busway. UK, Cambridge.	Cambridgeshire Guided Busway: introduction of buses on disused railway line. Traffic-free pedestrian and cycle route also introduced although not the focus
Karlstrom and Franklin, 2009	Uncontrolled before and after study	Commuters aged 12-84. Sweden, Stockholm.	Congestion charging in Sweden
Kesten et al 2015	Qualitative study	18 and over only. Participants from the Commuting and health in Cambridge study. UK, Cambridge.	Cambridgeshire Guided Busway
King et al 2015	Uncontrolled before and after study (Prospective, non-randomized study design)	Child and adult park users. USA, Denver.	Park renovation (playground equipment, sports fields, benches, gathering area)

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Knuiman et al 2014	Uncontrolled longitudinal study (natural experiment)	Whole population (adults only). Australia, Perth.	Natural experiment - neighbourhood changes over time
Krizek et al 2009	Controlled before and after study	Whole population and cyclists. USA, Minnesota.	Cycle infrastructure improvements over a decade
Loader and Stanley 2009	Uncontrolled before and after study	Whole population of bus users. Australia.	Improvements to bus services
Miller et al 2015	Uncontrolled before and after study (quasi-experimental design)	18 and over only. Mobile , not pregnant. USA, Utah.	Light rail transit (LRT) line and Complete Street rehabilitation, bike path and improved pavements
Montes et al 2012	Cost-benefit analysis using existing data	18 and over only. Event users. USA (San Francisco) and Mexico.	Ciclovia - community-based programmes closing streets to cars for use for leisure and physical activity (event)
Muennig et al 2014	Cost effectiveness study	School children. USA, New York City.	SR2S: education, encouragement, road improvements near schools
Norwood et al 2014	Controlled before and after study	18 and over only. UK, Scotland.	Scottish government Smarter Choices Smarter Places programme (SCSP). Upgrades to walking and cycling network.
O'Brien and Morris 2009	Uncontrolled before and after study	Whole population - activities specifically target low socio-economic groups, disabled persons, BME groups, women, girls and young people. UK – multiple.	Various woodland related. Children's play area, bike hire facilities, walking and cycling trails, concessions scheme etc.
Orenstein et al 2007	Whole programme effectiveness analysis	570 Safe Routes 2 Schools programmes. USA, California.	Safe routes to schools
Ostergaard et al 2015	Controlled before and after study (quasi-experimental controlled study)	School children. Denmark, multiple.	Environmental (road surface, signposting and traffic regulations like one-way streets) and behavioural
Panter et al 2016	Uncontrolled before and after study (Quasi-experimental	18 and over only. Commuters. UK, Cambridge.	Cambridgeshire Guided Busway

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	analysis nested within cohort study)		
Parker et al 2011	Uncontrolled before and after study	All ages. Cyclists. USA, New Orleans.	Installation of bicycle lanes along a highway
Parker et al 2013	Controlled before and after study	All ages. Cyclists. USA, New Orleans.	Introduction and striping of a 1 mile bike lane
Patton-Lopez et al 2015	Uncontrolled before and after study (Community-based participatory approach)	Children, adolescents and adults using park. Focus on youth. USA, Oregon.	Park improvements: tree houses, slides, natural climbing features, play equipment. Community involvement
Poindexter et al 2007	Uncontrolled before and after study	No age range given. Residents around bicycle facilities. USA, Minnesota.	"Bicycle facility" - infrastructure improvements
Quigg et al 2012	Controlled before and after study (natural experiment)	Children aged 5 - 10 years. New Zealand, Dunedin.	Upgrading of 2 playgrounds. Improved safety, waste facilities, new play equipment
Rissel et al 2015	Controlled before and after study (longitudinal, quasi-experimental design)	18-55 years only. No disability preventing from riding a bike. Australia, Sydney.	New bicycle path separated from road in inner Sydney
Roemmich et al 2014	Uncontrolled before and after study	0-12 years old and 19+ years old. USA, North Dakota.	Removal of seating in parks to increase activity in adults
Sahlqvist et al 2015	Mixed methods - uncontrolled before and after study	18 and over only. Within 5km of planned changes. UK, multiple.	Connect2. Traffic-free routes for walking and cycling. Traffic free bridge; informal riverside footpath turned into boardwalk
Sharaby and Shiftan 2012	Uncontrolled before and after study	All passengers using public bus transport. Israel, Haifa.	Fare integration - simpler public transport fare system
Sinnett and Powell 2012	Cost Benefit Analysis	Pedestrians. UK, multiple.	Fitter for Walking (FFW). Improvements to footpath access, safe crossings, lighting, and aesthetics

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Slater et al 2016	Controlled before and after study (quasi-experimental, prospective, longitudinal study design)	Whole population of park users. USA, Chicago.	Park improvements including replacing old playground equipment and surfacing
Sloman et al 2009	Evaluation of intervention using multiple secondary data sources	Whole population. UK, multiple.	Cycling England / Department for Transport Cycling Demonstration Town programme
Stewart et al 2014	Uncontrolled before and after study (one group pre-test and post-test)	Schools affected by safe route to schools project, and projects themselves. USA, multiple.	State-funded safe routes to school programme
Tester and Baker 2009	Controlled before and after study	Whole population of park users. USA, San Francisco.	RecConnect: park improvements
Torres et al 2016	Longitudinal cohort study	Whole population. USA, Atlanta.	Open Streets: making streets temporarily traffic-free (event) to promote physical and pedestrian activity
Transport for London 2008	Uncontrolled before and after study	Whole population. UK, London.	Extension of the congestion charge zone into western zones in London
Trayers et al 2006	Qualitative focus group study	Residents, primary school pupils, further education, planners. UK, Bristol.	
Veitch et al 2012	Controlled before and after study (natural experiment)	Children (2-18) and adult park users. Victoria, Australia.	Park refurbishment (fenced dog area, playground, walking track, BBQ area, landscaping, traffic-free measures)
Ward Thompson et al 2014	Controlled before and after study (Longitudinal cohort study)	65+ years only. Living in intervention or control streets. UK, multiple.	DIY Streets increasing safety and attractiveness through adding planters, changing parking provision, and reducing traffic volume and speed
West and Shores 2011	Uncontrolled before and after study	No age range given. Property owners. USA, exact location not given.	Environmental: creation of 5 miles of greenway along a river
West and Shores 2015	Controlled before and after study	Home owners. USA, exact location not given.	Extension of a greenway by 1.93 miles

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