Table S1

*Search syntax for electronic databases*

|  |  |
| --- | --- |
| **Walking interventions** | **Cycling interventions** |
| walk\* OR stair use OR activ\* commut\* OR activ\* travel\* OR green\* commut\* OR green\* transport\* OR green\* travel\* OR ecological commut\* OR ecological transport\* OR ecological travel\* OR non-motorised OR non-motorized OR physical\* activ\* OR  exercis\*  **AND**  campaign\* OR encourag\* OR habit\* OR impact\* OR increase\* OR  intervention\* OR pattern\* OR policy OR policies OR program\* OR program\* OR project\* OR promot\* OR scheme\* OR shift\* OR start\* OR Health behaviour\* OR Health education\* OR Health promotion\* OR Patient education | bicycl\* OR bike\* OR biking\* OR cycle hire OR cycling OR cyclist\* OR active\* OR green\* OR transport\* OR travel\*OR ecological commut\* OR ecological travel\* OR non-motorised OR non-motorized OR non-auto  **AND**  campaign\* OR encourag\* OR habit\* OR impact\* OR increase\* OR  intervention\* OR pattern\* OR policy OR policies OR program\* OR program\* OR project\* OR promot\* OR scheme\* OR shift\* OR start\* OR Health behaviour\* OR Health education\* OR Health promotion\* OR Patient education |

**Note.** \* = Truncation wildcard.

Table S2

*Sample characteristics of studies of walking and cycling interventions*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Study (a) | N (b) | Setting | Year | Age (M) | Country | Gender M / F | Population (c) | Target behavior (d) |
| **Interventions reported to have a statistically significant effect** | | | | | | | | |
| Hemmingsson | 120 | Community | 2009 | 48.2 | Sweden | 0 / 120 | Overweight women | Total W/C |
| Butler | 110 | Community | 2009 | 63.75 | Australia | 83 / 27 | CVD patients $ | Total W |
| Coull | 319 | Community | 2004 | 67.6 | USA | 191 / 128 | IHD patients \* | Total W |
| Halbert (2000) | 299 | Community | 2000 | 67.6 | Australia | 155 / 144 | Sedentary adults | Total W |
| Mutrie | 295 | Workplace | 2002 | 38 | Scotland | 109 / 186 | Motivated adults | W/C for T |
| Kerse | 267 | Community | 1999 | 73.55 | Australia | 123 / 144 | Elderly adults | Total W |
| Calfas | 255 | Community | 1996 | 39 | USA | 41 / 214 | Sedentary adults | Total W |
| Prestwich\* | 149 | Community | 2010 | 23.44 | England | 54 / 95 | Adults | Total W |
| Baker | 79 | Community | 2008 | 49.2 | Scotland | 16 / 63 | Sedentary adults | Total W |
| Gilson\* | 70 | Workplace | 2006 | 42.2 | Australia | 7 / 63 | Adults | Total W |
| Napolitano | 65 | Workplace | 2003 | 42.8 | USA | 9 / 56 | Sedentary adults | Total W |
| Fisher | 582 | Community | 2004 | 74 | USA | 182 / 400 | Elderly adults | W for R |
| Merom\* | 369 | Community | 2007 | 49.1 | Australia | 284 / 170 | Sedentary adults | W for R |
| Kriska | 229 | Community | 1988 | 57.6 | USA | 0 / 229 | Elderly women | Total W |
| Nies | 197 | Community | 2003 | 44.4 | USA | 0 / 197 | Sedentary women | Total W |
| Jarvis | 85 | Community | 1997 | 66.9 | USA | 0 / 85 | Elderly women | Total W |
| Pal | 30 | Community | 2009 | 43 | Australia | 0 / 30 | Overweight women | Total W |
| Shoup | 1694 | Workplace | 1997 | N/R | USA | N/R | Adults | W/C for T |
| **Interventions reported to have a statistically insignificant effect** | | | | | | | | |
| Norris | 847 | Community | 2000 | 54 | USA | 407 / 440 | Workplace HMO employees | Total W |
| Pereira | 229 | Community | 1998 | 70 | USA | 0 / 229 | Post-menopausal | Total W |
| Halbert (2001) | 69 | Community | 2001 | 69 | USA | 28 / 41 | Sedentary with osteoarthritis | Total W |
| Talbot | 36 | Community | 2003 | 70 | USA | 9 / 27 | Osteoarthritis | Total W |
| Ferreira \* | 64 | Community | 2005 | 61.9 | Brazil | 0 / 64 | Physically active | Total W |
| Tudor-Locke | 47 | Community | 2004 | 52.7 | USA | 26 / 21 | Overweight, sedentary with type II diabetes | Total W |
| Croteau | 15 | Community | 2004 | 80 | USA | 1 / 14 | Assisted living facility | Total W |
| Brownson (2005) | 1531 | Community | 2005 | 45-64 | USA | 360 / 1171 | Rural residents | Total W |
| Brownson (2004) | 1232 | Community | 2004 | 45-64 | USA | 303 / 929 | Rural residents | Total W |
| Cervero | 298 | Community | 2002 | 30-39 | USA | N/R | City CarShare members | W for T |
| **Interventions for which the statistical significance of the effect was not reported** | | | | | | | | |
| Marinelli | N/R | Community | 2002 | N/R | Australia | N/R | Households | W/C for T |
| Socialdata (Perth) | 2578 | Community | 2004 | N/R | Australia | N/R | Households | W/C for T |
| Socialdata (Melville) | 3090 | Community | 2001 | N/R | Australia | N/R | Households | W/C for T |
| Sustrans (Lancashire) | 2262 | Community | 2006 | N/R | England | N/R | Households | W/C for T |
| Sustrans (Nottingham) | 2057 | Community | 2004 | N/R | England | N/R | Households | W/C for T |
| Sustrans (Sheffield) | 1517 | Community | 2004 | N/R | England | N/R | Households | W/C for T |
| Sustrans (Gloucester) | 1367 | Community | 2004 | N/R | England | N/R | Households | W/C for T |
| Sustrans (Bristol) | 1360 | Community | 2004 | N/R | England | N/R | Households | W/C for T |
| Sustrans (Cramlington) | 1061 | Community | 2004 | N/R | England | N/R | Households | W/C for T |
| Sustrans (Doncaster) | 977 | Community | 2004 | N/R | England | N/R | Households | W/C for T |
| Wilmink | 2000 | Community | 1987 | N/R | Netherlands | N/R | Adults | W/C for T |
| TAPESTRY | 1299 | Community | 2003 | N/R | Germany | N/R | City residents | W/C for T |
| Haq | 242 | Community | 2004 | N/R | England | 115 / 127 | Households | W/C for T |

**Note.** N/R = not reported, (a) \* = study incorporating two or more interventions, (b) N = at baseline, (c) $ = Cardiovascular disease, \* = ischemic heart disease, (d) Total W = total walking, Total W/C = total walking and cycling, W for R = walking for recreation, W for T = walking for transport, W for R/T = walking for recreation or transport, W/C for R/T = walking or cycling for recreation or transport, W/C for T = walking or cycling for transport.

Table S3

*Study and intervention design components*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Study (a) | Design (b) | Theoretical framework (c) | Delivery (d) | Number / frequency (e) | Intervention duration (weeks) | Follow- up (f) | Process evaluation (g) |
| **Interventions reported to have a statistically significant effect** | | | | | | | |
| Hemmingsson | RCT | TTM | Group counseling | 5 / various | 52 | 18 months | N/A |
| Butler | RCT | N/A | One-to-one | 4 / various | 6 | 6 months | N/A |
| Coull | RCT | CC | One-to-one | 12 / monthly | 52 | - | N/A |
| Halbert (2000) | RCT | SCT | Group counseling | 1 / N/A | 24 | 12 months | N/A |
| Mutrie | RCT | TTM | Print-based | N/A | 52 | 12 months | N/A |
| Kerse | RCT | N/A | One-to-one | 5 / various | 8-12 | - | N/A |
| Calfas | Q | TTM | One-to-one | 1 / N/A | 1 | 6 weeks | Long et al. and Pender et al. |
| Prestwich (Plan) | RCT | N/A | Telephone-based | 1 / N/A | 4 | - | N/A |
| Prestwich (Goal) | RCT | N/A | Telephone-based | 1 / N/A | 4 | - | N/A |
| Baker | RCT | TTM | One-to-one | 12 / weekly | 12 | - | Fitzsimmons et al |
| Gilson (Routes) | RCT | N/A | Internet-based | 10 / weekly | 10 | - | N/A |
| Gilson (Tasks)) | RCT | N/A | Internet-based | 10 / weekly | 10 | - | N/A |
| Napolitano | RCT | SCT | Internet-based | 12 / weekly | 12 | 3 months | N/A |
| Fisher | RCT | N/A | Group exercise | 192 / 3x weekly | 24 | - | Fisher et al. |
| Merom (WPP) | RCT | SCT | Print-based | 6 / weekly | 6 | - | N/A |
| Merom (WP) | RCT | SCT | Print-based | 6 / weekly | 6 | - | N/A |
| Kriska | RCT | N/A | Group counseling and exercise | 16 / biweekly | 32 | 24 months | N/A |
| Nies | RCT | SCT | One-to-one | 16 / various | 24 | - | N/A |
| Jarvis | RCT | TTM | One-to-one | 12 / weekly | 12 | - | U/K |
| Pal | RCT | N/A | Print-based | 12 / weekly | 12 | - | N/A |
| Shoup | CR-CS | N/A | Financial incentive | N/A | 52-156 | - | N/A |
| **Interventions reported to have a statistically insignificant effect** | | | | | | | |
| Norris | RCT | N/A | Group counseling | 2 / monthly | 4 | 6 months | N/A |
| Pereira | RCT | N/A | Telephone-based | N/R | 104 | 10 years | Kriska et al. |
| Halbert (2001) | RCT | N/A | Group counseling | 72 / (3 x weekly) | 24 | 12 months | N/A |
| Talbot | RCT | N/A | Print-based | 12 / weekly | 12 | 6 months | N/A |
| Ferreira (N) | RCT | N/A | Group counseling | 12 / weekly | 12 | - | N/A |
| Ferreira (N/PA) | RCT | N/A | Group counseling | 12 / weekly | 12 | - | N/A |
| Ferreira (PA) | RCT | N/A | Group counseling | 12 / weekly | 12 | - | N/A |
| Tudor-Locke | RCT | N/A | Group counseling / print-based | 4 / weekly | 6 | 6 months | N/A |
| Croteau | RCT | SCT | Group counseling | 4 / weekly | 4 | - | N/A |
| Brownson (2005) | Q | TTM | Group exercise / print-based / one-to-one | 6 / monthly | 4 | - | N/A |
| Brownson (2004) | Q | TTM | Group exercise / print-based | 6 / monthly | 4 | - | N/A |
| Cervero | CR-CS | N/A | Car share scheme | N/A | 12 - 16 | - | N/A |
| **Interventions for which the statistical significance of the effect was not reported** | | | | | | | |
| Marinelli | CR-CS | N/A | ‘Indi-mark’ | N/A | 24 | 6 months | N/A |
| Socialdata (Perth) | CR-CS | N/A | ‘Indi-mark’ | N/A | 36 | 8 months | N/A |
| Socialdata (Melville) | CR-CS | N/A | ‘Indi-mark’ | N/A | 40 | 6 months | N/A |
| Sustrans (Lancashire) | CR-CS | N/A | ‘Indi-mark’ | N/A | 52 | 9 months | N/A |
| Sustrans (Nottingham) | CR-CS | N/A | ‘Indi-mark’ | N/A | 4 | 6 months | N/A |
| Sustrans (Sheffield) | CR-CS | N/A | ‘Indi-mark’ | N/A | 52 | 9 months | N/A |
| Sustrans (Gloucester) | CR-CS | N/A | ‘Indi-mark’ | N/A | 54 | 9 months | N/A |
| Sustrans (Bristol) | CR-CS | N/A | ‘Indi-mark’ | N/A | 12 | 9 months | N/A |
| Sustrans (Cramlington) | CR-CS | N/A | ‘Indi-mark’ | N/A | 36 | 9 months | N/A |
| Sustrans (Doncaster) | CR-CS | N/A | ‘Indi-mark’ | N/A | 12 | 6 months | N/A |
| Wilmink | CR-CS | CT | Infrastructure change | N/A | 156 | - | N/A |
| TAPESTRY | CR-CS | N/A | ‘Indi-mark’ | N/A | 52 | 12 months | N/A |
| Haq | CR-CS | N/A | ‘Indi-mark’ | N/A | 24 | 6 months | N/A |

**Note.** (a) (WP) = walking program, (WPP) = walking with pedometer, (Routes) = walking in routes, (Tasks) = walking in tasks, (N) = nutrition, (N/PA) = nutrition and physical activity, (PA) = physical activity, (b) RCT = Randomized controlled trial, CR-CS = Controlled repeat cross-sectional, Q = Quasi-experimental, C-C = Controlled-cohort, N/A – not applicable (c) Theoretical Framework: TTM = Transtheoretical Model, SCT = Social Cognitive Theory, CC =Client-Centered Approach, CT = Choice Theory, N/A = not applicable, (d) ‘Indi-mark’ = individualized marketing approach, (e) number and frequency of sessions, (f) Follow-up: - = follow-up measure taken immediately following the end of the intervention, (g) Process evaluation: references for intervention studies which provided additional information on intervention methods or content, N/A = not applicable.

Table S4

*Post-intervention walking and cycling outcomes*

|  |  |  |  |
| --- | --- | --- | --- |
| Study (a) | Measurement | Outcome (b) | Effect size (*CI*) (c) |
| **Interventions reported to have a statistically significant effect** | | | |
| Hemmingsson | Self-report | Walking target of 10,000 steps/day (NS)  Cycling target of >2km/day (*p* < .001) | N/R |
| Butler | Pedometer | + 87 minutes/week | 0.14 (95% *CI* -0.26 to 0.53) |
| Coull | Self-report | + 73 minutes/week (95% *CI* 1 to 137) | N/R |
| Halbert (2000) | Self-report | + 30minutes/week (*p* < .05) | N/R |
| Mutrie | Self-report | + 64 walking minutes/week (*p* < .05)~  + 0 cycling minutes/week (*p* < .05)~ | N/R |
| Kerse | Self-report | + 44 minutes/week (95% *CI* 8-168) | N/R |
| Calfas | Self-report | + 34 minutes/week (*p* < .025) | N/R |
| Prestwich (Plan) | Self-report | +1.38 days W/week | 0.49 (95% *CI* 0.05 to 0.94) |
| Prestwich (Goal) | Self-report | +1.42 days W/week | 0.45 (95% *CI* 0.04 to 0.88) |
| Baker | Pedometer | + 22,225 steps/week (*p* < .001) | 0.75 (95% *CI* 0.29 to 1.20) |
| Gilson (Routes) | Pedometer | + 6482 steps/week (*p* < .002) | N/R |
| Gilson (Tasks) | Pedometer | +6979 steps/week (*p* < .005) | N/R |
| Napolitano | Self-report | + 62 minutes/week (*p* < .05) | 0.41 (95% *CI* 0.15 to 0.97) |
| Fisher | Self-report | ES = 0.35 (95% *CI* 0.15 to 0.54) | 0.35 (95% *CI* 0.15 to 0.54) |
| Merom (WPP) | Self-report | + 66 minutes/week (*p* < .001) | N/R |
| Merom (WP) | Self-report | + 64 minutes/week (*p* < .001) | N/R |
| Kriska | Self-report | + 7 miles per week (*p* < .05) | 0.73 (95% *CI* 0.46 to 0.99) |
| Nies | Self-report | + 32 minutes/week (*p* < .01) | 0.30 (95% *CI* 0 to 0.59) |
| Jarvis | Self-report | + 50 minutes/week (*p* < .02) | N/R |
| Pal | Pedometer | + 24,227 steps/week (*p* < .04) | N/R |
| Shoup | Self-report | + 1.1% walking trips (*p* < .01)  + 1.1% cycling trips (SSNR) | N/R |
| **Interventions reported to have a statistically insignificant effect** | | | |
| Norris | Self-report | +1 minutes/week (NS) | N/R |
| Pereira | Self-report | +7.3 miles/week (NS) | N/R |
| Halbert (2001) | Self-report | +0 sessions/week (NS) | N/R |
| Talbot | Self-report / pedometer | +687 steps/day (NS) | N/R |
| Ferreira (N) | Self-report | +0 change in minutes/week (NS) | N/R |
| Ferreira (N/PA) | Self-report | +0 change in minutes/week (NS) | N/R |
| Ferreira (PA) | Self-report | +0 change in minutes/week (NS) | N/R |
| Tudor-Locke | Self-report / pedometer | +1367 steps/day (NS) | N/R |
| Croteau | Self-report / pedometer | -1124 steps/week (NS) | N/R |
| Brownson (2005) | Self-report | +5.2 minutes/week (NS) | N/R |
| Brownson (2004) | Self-report | -1.4 minutes/week (NS) | N/R |
| Cervero | Self-report | -3.4% walking trips (NS) | N/R |
| **Interventions for which the statistical significance of the effect was not reported** | | | |
| Marinelli | Self-report | +18 trips/year (SSNR) | N/R |
| Socialdata (Perth) | Self-report | +3 minutes/day (SSNR) | N/R |
| Socialdata (Melville) | Self-report | +5 minutes/day (SSNR) | N/R |
| Sustrans (Lancashire) | Self-report | +1 minute/day (SSNR) | N/R |
| Sustrans (Nottingham) | Self-report | +2 minutes/day in one area, +3 minutes/day in another (SSNR) | N/R |
| Sustrans (Sheffield) | Self-report | +2 minutes/day (SSNR) | N/R |
| Sustrans (Gloucester) | Self-report | +25 trips/year (SSNR) | N/R |
| Sustrans (Bristol) | Self-report | +2 minutes/day (SSNR) | N/R |
| Sustrans (Cramlington) | Self-report | +1 minute/day (SSNR) | N/R |
| Sustrans (Doncaster) | Self-report | +0 minutes/day (SSNR) | N/R |
| Wilmink | Self-report | +2 trips/year (SSNR) | N/R |
| TAPESTRY | Self-report | +16 trips/year (SSNR) | N/R |
| Haq | Self-report | +0.1 km/wk (SSNR) | N/R |

**Note.** (a) (WP) = walking program, (WPP) = walking with pedometer, (Routes) = walking in routes, (Tasks) = walking in tasks, (N) = nutrition, (N/PA) = nutrition and physical activity, (PA) = physical activity, (b) Outcome: ~ = tabulated effect size is that observed in most sedentary subgroup, not across whole study population, NS = Interventions reported to have a statistically insignificant effect, SSNR = statistical significance not reported, ES = effect size, days W/week = days walked, per week. (c) Effect size (if more than one follow-up result, effect size calculated from data reported furthest from baseline data), N/R = not reported.

Table S5

*Study quality assessment*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Study (a) | Pre- and post- data (b) | Comparability (c) | Randomization (d) | Response rate (e) | Attrition rate (f) | Statistics (g) | Follow-up (h) | Total |
| **Interventions reported to have a statistically significant effect** | | | | | | | | |
| Hemmingsson | YES | YES | YES | YES | YES | YES | YES | 7 |
| Butler | YES | YES | YES | YES | YES | YES | YES | 7 |
| Coull | YES | YES | YES | YES | YES | YES | - | 6 |
| Halbert (2000) | YES | YES | YES | YES | YES | YES | - | 6 |
| Mutrie | YES | YES | YES | YES | - | YES | YES | 6 |
| Kerse | YES | YES | YES | YES | YES | YES | - | 6 |
| Calfas | YES | YES | - | YES | YES | YES | YES | 6 |
| Prestwich\* | YES | YES | YES | YES | YES | YES | - | 6 |
| Baker | YES | YES | YES | YES | YES | YES | - | 6 |
| Gilson\* | YES | YES | YES | YES | YES | YES | - | 6 |
| Napolitano | YES | YES | YES | - | YES | YES | YES | 6 |
| Fisher | YES | YES | YES | YES | - | YES | - | 5 |
| Merom\* | YES | YES | YES | - | YES | YES | - | 5 |
| Kriska | YES | YES | YES | - | YES | YES | - | 5 |
| Nies | YES | YES | YES | - | YES | YES | - | 5 |
| Jarvis | YES | YES | YES | - | YES | YES | - | 5 |
| Pal | YES | YES | YES | - | YES | YES | - | 5 |
| Shoup | YES | YES | - | - | YES | YES | - | 4 |
| **Interventions reported to have a statistically insignificant effect** | | | | | | | | |
| Norris | YES | YES | YES | - | YES | YES | YES | 6 |
| Pereira | YES | YES | YES | - | YES | YES | YES | 6 |
| Halbert (2001) | YES | YES | YES | - | YES | YES | YES | 6 |
| Talbot | YES | YES | YES | YES | YES | YES | - | 6 |
| Ferreira \* | YES | YES | - | YES | YES | YES | - | 5 |
| Tudor-Locke | YES | YES | YES | - | - | YES | YES | 5 |
| Croteau | YES | YES | YES | - | YES | YES | - | 5 |
| Brownson (2005) | YES | YES | - | - | - | YES | YES | 4 |
| Brownson (2004) | YES | YES | - | - | - | YES | YES | 4 |
| Cervero | YES | - | - | - | - | YES | - | 2 |
| **Interventions for which the statistical significance of the effect was not reported** | | | | | | | | |
| Marinelli | YES | YES | - | YES | YES | - | YES | 5 |
| Socialdata (Perth) | YES | YES | - | YES | YES | - | YES | 5 |
| Socialdata (Melville) | YES | YES | - | - | YES | - | YES | 4 |
| Sustrans (Lancashire) | YES | - | - | YES | YES | - | YES | 4 |
| Sustrans (Nottingham) | YES | - | - | YES | YES | - | YES | 4 |
| Sustrans (Sheffield) | YES | - | - | YES | YES | - | YES | 4 |
| Sustrans (Gloucester) | YES | - | - | YES | YES | - | YES | 4 |
| Sustrans (Bristol) | YES | - | - | YES | YES | - | YES | 4 |
| Sustrans (Cramlington) | YES | - | - | YES | YES | - | YES | 4 |
| Sustrans (Doncaster) | YES | - | - | YES | YES | - | YES | 4 |
| Wilmink | YES | YES | - | YES | - | - | YES | 4 |
| TAPESTRY | YES | - | - | YES | - | - | YES | 3 |
| Haq | YES | - | - | - | - | - | - | 1 |

**Note.** (a) \* = study incorporating two or more interventions, (b) were data collected at baseline and post-intervention?, (c) were baseline characteristics of intervention and control groups, populations, or areas comparable, or, if there were important differences in potential confounders at baseline, were these appropriately adjusted for in analysis?, (d) were participants, groups, or areas randomly allocated to intervention and control groups?, (e) were study samples randomly recruited from study population with response rate of at least 60%, or were they otherwise shown to be representative of study population? (f) were outcomes studied in cohort or panel of respondents with attrition rate of less than 30%, or were results based on repeated cross sectional design with minimum achieved sample of at least 100 participants in each wave in both intervention and control groups?, (g) was a test of statistical significance applied specifically to the observed net change in walking and/or cycling behavior?, (h) was there a follow-up?

Table S6

*BCTs coded from walking and cycling interventions*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Study (a) | Study quality (b) | | Behavior change technique (c) | | | | | | | | | | | |  |
|  |  | | Health-behavior | Consequences | Others’ approval | Intention formation | Barrier identification | General encouragement | Graded tasks | Instruction | Model/demonstrate behavior | Goal setting | Review behavioral goals | Self-monitoring | Feedback |
| **Interventions reported to have a statistically significant effect** | | | | | | | | | | | | | | |  |
| Hemmingsson | | 7 | YES | - | - | YES | YES | - | - | YES | - | - | - | YES | YES |
| Butler | | 7 | YES | YES | - | YES | YES | YES | - | YES | - | - | - | YES | YES |
| Coull | | 6 | YES | - | - | YES | - | - | - | - | - | - | - | - | - |
| Halbert (2000) | | 6 | - | YES | - | - | YES | YES | YES | YES | - | YES | YES | YES | YES |
| Mutrie | | 6 | - | YES | - | - | - | YES | - | - | - | - | - | YES | - |
| Kerse | | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Calfas | | 6 | - | YES | - | YES | YES | YES | - | - | - | YES | - | YES | YES |
| Prestwich (Plan) | | 6 | - | YES | - | YES | - | YES | - | - | - | YES | - | - | - |
| Prestwich (Goal) | | 6 | - | YES | - | YES | - | YES | - | - | - | YES | - | - | - |
| Baker | | 6 | - | YES | - | YES | YES | YES | YES | YES | - | YES | YES | YES | YES |
| Gilson (Routes) | | 6 | - | - | - | - | - | - | - | - | - | YES | - | - | - |
| Gilson (Tasks) | | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Napolitano | | 6 | YES | YES | - | YES | YES | - | - | YES | - | - | - | YES | - |
| Fisher | | 5 | YES | YES | - | - | - | - | - | YES | - | - | - | YES | - |
| Merom (WPP) | | 5 | YES | - | - | YES | - | YES | YES | YES | - | YES | - | YES | - |
| Merom (WP) | | 5 | YES | - | - | YES | - | YES | YES | YES | - | YES | - | YES | - |
| Kriska | | 5 | - | - | - | - | YES | YES | YES | YES | - | YES | - | YES | YES |
| Nies | | 5 | - | YES | - | YES | YES | YES | YES | - | - | - | YES | - | - |
| Jarvis | | 5 | - | YES | - | YES | - | - | - | YES | - | - | - | YES | - |
| Pal | | 5 | YES | - | - | YES | - | - | YES | - | - | YES | - | YES | YES |
| Shoup | | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | |  | 8 | 11 | 0 | 13 | 8 | 11 | 7 | 10 | 0 | 10 | 3 | 13 | 7 |
| **Interventions reported to have a statistically insignificant effect** | | | | | | | | | | | | | | |  |
| Norris | 6 | | - | YES | - | YES | YES | YES | - | - | - | - | - | YES | - |
| Pereira | 6 | | - | - | - | YES | YES | YES | YES | YES | - | YES | - | YES | YES |
| Halbert (2001) | 6 | | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Talbot | 6 | | - | - | - | - | - | - | YES | YES | - | YES | - | YES | YES |
| Ferreira (N) | 6 | | YES | - | - | - | - | - | - | - | - | - | - | - | - |
| Ferreira (N/PA) | 6 | | YES | YES | - | - | YES | - | - | - | - | - | - | - | - |
| Ferreira (PA) | 5 | | - | YES | - | - | YES | - | - | - | - | - | - | - | - |
| Tudor-Locke | 5 | | - | - | - | YES | YES | YES | - | - | - | - | - | - | YES |
| Croteau | 5 | | - | - | - | YES | - | - | YES | - | - | YES | YES | - | - |
| Brownson (2005) | 5 | | - | - | - | - | - | YES | - | - | - | - | - | - | YES |
| Brownson (2004) | 5 | | - | - | - | YES | - | YES | - | - | - | - | - | - | YES |
| Cervero | 2 | | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total |  | | 2 | 3 | 0 | 5 | 5 | 5 | 3 | 2 | 0 | 3 | 1 | 3 | 5 |
| **Interventions for which the statistical significance of the effect was not reported** | | | | | | | | | | | | | | |  |
| Marinelli | 5 | | YES | - | - | - | - | YES | - | - | - | - | - | - | - |
| Socialdata (Perth) | 5 | | - | - | - | - | - | YES | - | - | - | - | - | - | - |
| Socialdata (Melville) | 4 | | - | - | - | - | - | YES | - | - | - | - | - | - | - |
| Sustrans (Lancashire) | 4 | | - | - | - | - | - | YES | - | - | - | - | - | - | - |
| Sustrans (Nottingham) | 4 | | - | - | - | - | - | YES | - | - | - | - | - | - | - |
| Sustrans (Sheffield) | 4 | | - | - | - | - | - | YES | - | - | - | - | - | - | - |
| Sustrans (Gloucester) | 4 | | - | - | - | - | - | YES | - | - | - | - | - | - | - |
| Sustrans (Bristol) | 4 | | - | - | - | - | - | YES | - | - | - | - | - | - | - |
| Sustrans (Cramlington) | 4 | | - | - | - | - | - | YES | - | - | - | - | - | - | - |
| Sustrans (Doncaster) | 4 | | - | - | YES | - | - | YES | - | - | - | - | - | - | - |
| Wilmink | 4 | | - | - | - | - | - | - | - | - | - | - | - | - | - |
| TAPESTRY | 3 | | - | - | - | - | - | YES | - | - | YES | - | - | - | - |
| Haq | 1 | | YES | YES | - | - | - | YES | - | YES | - | - | - | - | - |
| Total |  | | 2 | 1 | 1 | 0 | 0 | 12 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |

Table S6 (continued)

*BCTs coded from walking and cycling interventions*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Study (a) | Study quality (b) | Behavior change technique (c) | | | | | | | | | | | | | | | |
|  |  | Contingent rewards | Use prompts/cues | Behavioral contract | Practice | Follow-up | Social comparison | Social support | Role model | Self-talk | Relapse prevention | Stress management | Motivational interviewing | Time management | | | |
| **Interventions reported to have a statistically significant effect** | | | | | | | | | | | | | | | | | |
| Hemmingsson | 7 | - | YES | - | - | - | YES | YES | - | - | YES | - | - | - | | | |
| Butler | 7 | - | - | - | - | YES | YES | - | - | - | - | - | - | - | | | |
| Coull | 6 | - | - | - | - | - | YES | - | - | - | - | - | - | - | | | |
| Halbert (2000) | 6 | - | - | - | - | - | YES | YES | - | - | - | - | - | - | | | |
| Mutrie | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | | | |
| Kerse | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | | | |
| Calfas | 6 | - | - | YES | - | YES | - | YES | - | - | YES | - | - | - | | | |
| Prestwich (Plan) | 6 | - | YES | - | - | - | - | - | - | - | - | - | - | - | | | |
| Prestwich (Goal) | 6 | - | YES | - | - | - | - | - | - | - | - | - | - | - | | | |
| Baker | 6 | - | YES | - | - | - | - | YES | - | - | - | - | - | - | | | |
| Gilson (Routes) | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | | | |
| Gilson (Tasks) | 6 | - | YES | - | - | - | - | - | - | - | - | - | - | - | | | |
| Napolitano | 6 | - | - | - | - | - | - | YES | - | - | YES | - | - | - | | | |
| Fisher | 5 | - | - | - | YES | - | YES | - | - | - | - | - | - | - | | | |
| Merom (WPP) | 5 | - | - | - | - | - | - | - | - | - | - | - | - | - | | | |
| Merom (WP) | 5 | - | - | - | - | - | - | - | - | - | - | - | - | - | | | |
| Kriska | 5 | YES | - | - | - | YES | YES | YES | - | - | - | - | - | - | | | |
| Nies | 5 | YES | - | - | - | - | - | YES | - | - | YES | - | - | - | | | |
| Jarvis | 5 | - | - | - | - | - | - | - | - | - | - | - | - | - | | | |
| Pal | 5 | - | YES | - | - | - | - | - | - | - | - | - | - | - | | | |
| Shoup | 4 | YES | - | - | - | - | - | - | - | - | - | - | - | - | | | |
| Total |  | 3 | 6 | 1 | 1 | 3 | 6 | 7 | 0 | 0 | 4 | 0 | 0 | 0 | | | |
| **Interventions reported to have a statistically insignificant effect** | | | | | | | | | | | | | | | |
| Norris | 6 | - | - | YES | - | - | - | YES | - | - | - | - | - | - |  | | |
| Pereira | 6 | YES | - | - | - | YES | YES | YES | - | - | - | - | - | - |  | | |
| Halbert (2001) | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - |  | | |
| Talbot | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - |  | | |
| Ferreira (N) | 6 | - | - | - | - | - | YES | - | - | - | - | - | - | - |  | | |
| Ferreira (N/PA) | 6 | - | - | - | - | - | YES | - | - | - | - | - | - | - |  | | |
| Ferreira (PA) | 5 | - | - | - | - | - | YES | - | - | - | - | - | - | - |  | | |
| Tudor-Locke | 5 | - | - | - | - | - | YES | YES | - | - | - | - | - | - |  | | |
| Croteau | 5 | - | - | - | - | - | - | - | - | - | - | - | - | - |  | | |
| Brownson (2005) | 5 | - | - | - | - | - | YES | YES | - | - | - | - | - | - |  | | |
| Brownson (2004) | 5 | - | - | - | - | - | YES | YES | - | - | - | - | - | - |  | | |
| Cervero | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - |  | | |
| Total |  | 1 | 0 | 1 | 0 | 1 | 7 | 5 | 0 | 0 | 0 | 0 | 0 | 0 |  | | |
| **Interventions for which the statistical significance of the effect was not reported** | | | | | | | | | | | | | | | | | |
| Marinelli | 5 | - | - | - | - | - | - | - | - | - | - | - | - | - |  | |
| Socialdata (Perth) | 5 | - | - | - | - | - | - | - | - | - | - | - | - | - |  | |
| Socialdata (Melville) | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |  | |
| Sustrans (Lancashire) | 4 | - | YES | - | YES | - | - | - | - | - | - | - | - | - |  | |
| Sustrans (Nottingham) | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |  | |
| Sustrans (Sheffield) | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |  | |
| Sustrans (Gloucester) | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |  | |
| Sustrans (Bristol) | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |  | |
| Sustrans (Cramlington) | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |  | |
| Sustrans (Doncaster) | 4 | - | - | - | YES | - | - | - | - | - | - | - | - | - |  | |
| Wilmink | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |  | |
| TAPESTRY | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |  | |
| Haq | 1 | - | - | - | - | - | YES | - | - | - | - | - | - | - |  | |
| Total |  | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | |

**Note.** (a) (WP) = walking program, (WPP) = walking with pedometer, (Routes) = walking in routes, (Tasks) = walking in tasks, (N) = nutrition, (N/PA) = nutrition and physical activity, (PA) = physical activity, (b) Study quality = studies scoring 6-7 were deemed ‘higher’ quality, 4-5 as ‘medium’, and 0-3 as ‘lower’ quality, (c) 1 = Provide information on the health-behavior link, 2 = provide information on consequences, 3 = provide information about others’ approval, 4 = prompt intention formation, 5 = prompt barrier identification, 6 = provide general encouragement, 7 = set graded tasks, 8 = provide instruction, 9 = model/demonstrate behavior, 10 = prompt specific goal setting, 11 = prompt review of behavioral goals, 12 = prompt self-monitoring of behavior, 13 = provide feedback on performance, 14 = provide contingent rewards, 15 = teach to use prompts/cues, 16 = agree behavioral contract, 17 = prompt practice, 18 = use of follow-up prompts, 19 = provide opportunities for social comparison, 20 = plan social support/social change, 21 = prompt identification as role model/position advocate, 22 = prompt self-talk, 23 = relapse prevention, 24 = stress management, 25 = motivational interviewing, 26 = time management.



Figure S2   
*BCTs coded from walking and cycling interventions. Studies are ranked by study quality (number of criteria met, see Table S5), then sample size.*

