Evidence Portfolio – Physical Activity Promotion Subcommittee, Question 1: Community

What interventions are effective for increasing physical activity?

a. Does the effectiveness vary by age, sex, race/ethnicity, or socio-economic status?

Sources of Evidence: Existing Systematic Reviews, Meta-Analyses, and High-Quality Reports

Conclusion Statements and Grades

CHILDCARE AND PRESCHOOL SETTINGS INTERVENTIONS

Limited evidence suggests that interventions occurring in child care or preschool settings are effective for increasing physical activity in children ages 6 years and younger. **PAGAC Grade: Limited.**

COMMUNITY-WIDE INTERVENTIONS

Moderate evidence indicates that community-wide interventions that employ intensive contact with the majority of the target population over time can increase physical activity across the population. **PAGAC Grade: Moderate.**

Limited evidence suggests that community-wide interventions using strategies that reach a smaller proportion of the target population, employ less intensive contact over time, and focus on a relatively narrow set of strategies are effective in promoting community-wide physical activity change. **PAGAC Grade: Limited.**

FAITH BASED COMMUNITY INTERVENTIONS

Limited evidence suggests that interventions that are either faith-based or faith-placed may be effective for promoting physical activity. **PAGAC Grade: Limited.**

NURSE-DELIVERED IN HOME OR OTHER COMMUNITY SETTINGS INTERVENTIONS

Limited evidence suggests that nurse-delivered interventions in community settings are effective for increasing physical activity in adults. **PAGAC Grade: Limited.**

PRIMARY CARE SETTINGS INTERVENTIONS

Limited evidence exists that primary care-based interventions targeting increases in physical activity among adults are effective when compared with minimal or usual care conditions, particularly over medium (i.e., 6 to 11 months) and longer periods (i.e., 12 months or more). **PAGAC Grade: Limited.**

SCHOOLS INTERVENTIONS

Strong evidence demonstrates that interventions that affect multiple components of schools are effective for increasing physical activity during school hours in primary school-aged (typically ages 5 to 12 years) and adolescent youth. **PAGAC Grade: Strong.**

Strong evidence demonstrates that interventions that revise the structure of physical education classes are effective for increasing in-class physical activity in primary school-aged and adolescent youth. **PAGAC Grade: Strong.**

Limited evidence suggests that interventions that modify the designs of school playgrounds or that change recess sessions in other ways are effective for increasing physical activity in youth. **PAGAC Grade: Limited.**

WORKSITE INTERVENTIONS

Limited evidence suggests overall that worksite interventions are effective for increasing physical activity in adults, particularly over medium (i.e., 6 to 11 months) and longer periods (i.e., 12 or more months). **PAGAC Grade: Limited.**

Description of the Evidence

An initial search for systematic reviews, meta-analyses, pooled analyses, and reports identified sufficient literature to answer the evaluation question as determined by the Physical Activity Promotion Subcommittee. Additional searches for original research were not needed.

Existing Systematic Reviews, Meta-Analyses, and Reports

CHILDCARE AND PRESCHOOL SETTINGS INTERVENTIONS

Overview

Three existing reviews were included: 1 meta-analysis,[1] 1 systematic review,[2] and 1 report.[3] They were published from 2012 to 2016.

Finch et al[1] included 17 studies and covered the earliest date available (i.e., inception) to September 2014. Mehtala et al[2] included 23 studies and covered inception to May 2013. The report[3] covered 2001 to July 2012.

Interventions

The included reviews examined the effects of physical activity interventions carried out in a childcare or preschool setting.

Outcomes

All of the reviews addressed changes in physical activity. Mehtala et al[2] examined physical activity measured using a combination of self-report, direct observation, and/or device-based measurement (i.e., pedometers, accelerometers). Finch et al[1] examined physical activity measured using pedometers or accelerometers only.

COMMUNITY-WIDE INTERVENTIONS

Overview

Three systematic reviews[4-6] and one report[3] were included. They were published from 2012 to 2015.

The systematic reviews included a range of 10 to 33 studies. The systematic reviews covered the following timeframes: inception to June 2013,[6] 1980 to 2008,[5] and 1995 to January 2014.[4] The report covered 2001 to July 2012.[3]

Interventions

The included reviews examined the effects of community-wide interventions to increase physical activity. Brown et al[5] examined the effectiveness of stand-alone mass media campaigns to increase physical activity at the population level.

Outcomes

The included reviews addressed changes in physical activity levels measured in a variety of ways.

FAITH BASED COMMUNITY INTERVENTIONS

Overview

Two existing systematic reviews were included.[7, 8] The systematic review by Bopp et al[7] included 27 studies and covered a timeframe from inception to May 2011. The systematic review by Parra et al[8] included 18 studies and covered a timeframe from inception to January 2016.

Interventions

The included reviews examined the effects of physical activity interventions implemented in faith-based organizations or with spiritual/religious involvement.

Outcomes

Studies in the included reviews examined changes in physical activity levels using self-report and/or device-based measures.

NURSE-DELIVERED IN HOME OR OTHER COMMUNITY SETTINGS INTERVENTIONS

Overview

Two existing systematic reviews were included.[9, 10] Both reviews were published in 2016.

The systematic reviews included a range of 8 to 13 studies. Both reviews covered the 1990 to 2015 timeframes.

Interventions

Both reviews[9, 10] examined physical activity intervention studies delivered by registered nurses. Richards and Cai[10] specifically examined studies conducted by nurses at participants' homes.

Outcomes

Both reviews examined changes in physical activity using a combination of subjective (e.g., self-reported physical activity behaviors) and device-based (e.g., daily step counts measured by pedometer) measures. The reviews also addressed other outcomes including adherence to exercise.

PRIMARY CARE SETTINGS INTERVENTIONS

Overview

A total of 13 existing reviews were included: 2 meta-analyses,[11, 12] 10 systematic reviews,[13-22] and 1 report.[23] The reviews were published from 2011 to 2017.

The meta-analyses included a range of 14 to 17 studies and covered the following timeframes: inception to May 2010[12] and from 2000 to September 2015.[11]

The systematic reviews included a range of 10 to 30 studies. The systematic reviews covered an extensive timeframe: inception to March 2016,[13] inception to October 2011,[15] inception to May 2015,[17]

inception to May 2010,[20] 2000 to 2012,[14] 2000 to 2013,[16] 2000 to October 2016,[21]2002 to 2012,[22] and 2004 to May 2014.[18] Morton et al[19] did not report the timeframe.

Interventions

The majority of studies focused on the efficacy of a varied range of intervention strategies to increase physical activity within primary care settings, while one focused exclusively on motivational interviewing techniques.[19]

Outcomes

All of the reviews addressed changes in physical activity. The reviews measured physical activity through self-report and/or device-based measures. Pavey et al[23] also examined physical fitness, health outcomes, adverse events, and uptake and adherence to exercise referral scheme.

SCHOOLS INTERVENTIONS

Overview

A total of 9 existing reviews were included: 5 systematic reviews,[24-28] 2 meta-analyses,[29, 30] and 2 reports.[3, 31]

The systematic reviews included a range of 8 to 129 studies. The systematic reviews covered the following timeframes: 1900 to May 2012,[25] 1986 to May 2011,[26] 2000 to April 2011,[27] 2001 to 2010,[28] and July 2008 to December 2010.[24]

The meta-analyses included a range of 13 to 15 studies. The meta-analyses covered extensive timeframes: from inception to March 2012[29] and 1950 to April 2015.[30]

Interventions

The included reviews examined the effects of physical activity interventions carried out in school settings. Three reviews[25-27] assessed interventions to increase physical activity during school recess. Lonsdale et al[29] examined interventions aimed at increasing moderate to-vigorous physical activity in physical education lessons. Mears and Jago[30] examined the physical activity interventions in after-school programs.

Outcomes

All of the reviews addressed changes in physical activity levels. Four reviews[24, 25, 29, 30] examined time spent in vigorous physical activity and/or moderate-to-vigorous physical activity. Saraf et al[28] also assessed change in sedentary activity.

WORKSITE INTERVENTIONS

Overview

Six systematic reviews were included.[32-37] The reviews were published from 2012 to 2015.

The systematic reviews included a range of 9 to 58 studies. The systematic reviews covered an extensive timeframe: inception to October 2010,[37] inception to October 2014,[36] 1950 to April 2011,[32] 1970 to February 2013,[34] 2000 to June 2011,[33] and 2000 to 2010.[35]

Interventions

The included reviews examined the effects of worksite physical activity interventions. One review[37] examined worksite physical activity interventions for men. One review[36] specifically examined a physical activity intervention with nurses or nursing students currently working in a health care setting. Another review[34] examined interventions implemented in tertiary education settings aimed at improving health behaviors of staff.

Outcomes

Included reviews addressed changes in physical activity levels. In all of the reviews, physical activity was measured by self-report using device-based measures (e.g., pedometers, accelerometers), or using a combination of both. Some included reviews also examined other outcomes including infrastructure usage and readiness to change exercise behavior. Three reviews[34-36] also assessed change in sedentary behaviors, in addition to physical activity as an outcome.

Populations Analyzed

Table 1. Populations Analyzed by All Sources of Evidence

	Sex	Race/ Ethnicity	Age	Other
Arsenijevic, 2017			Adults	
Attwood, 2016			Adults ≥16	
Baker, 2015			All ages	
Bopp, 2012			All ages	
Brown, 2012			Youth 9–17, Adults	
Bully, 2015			Adults	
Demetriou, 2012			Children and adolescents	
Denison, 2014			Adults ≥18	
DHHS, 2012			Children 3–17	
Escalante, 2014			Children 2–12	
Finch, 2016			Children 0–6	
Gagliardi, 2015			Adults 18–64	
Ickes, 2013			Children 3–12	
Laine, 2014			All ages	
Lamming, 2017			Adults	
Lonsdale, 2013			Children and adolescents	
Malik, 2014			Adults	
Mears, 2016			Children 5–15	
Mehtala, 2014			Children 2–6	
Melvin, 2017		Black or African American; Hispanic or Latino	Adults 18–75	
Morton, 2015			Adults	
Mozaffarian, 2012			Age not reported	

	Sex	Race/ Ethnicity	Age	Other
Neidrick, 2012			Adults ≥50	
Orrow, 2013			Adults ≥16	
Osilla, 2012			Adults	
Parra, 2017			Adults ≥18	
Parrish, 2013			Children 5–18	
Pavey, 2011			Adults	
Plotnikoff, 2015			Adults	
Ramoa Castro, 2017			Adults	
Richards, 2016a			Adults 20–86	
Richards, 2016b			Adults	
Sanchez, 2015			Adults ≥18	
Saraf, 2012			Children and adolescents	
To, 2013			Adults	
Torquati, 2015			Adults 19–67	Nurses
Wong, 2012	Male		Adults 18–60	

Supporting Evidence

Existing Systematic Reviews and Meta-Analyses

Table 2. Existing Systematic Reviews and Meta-Analyses Individual Evidence Summary Tables

<table>
<tr><th colspan="2">Childcare and Preschool</th></tr>
<tr><td colspan="2">Meta-Analysis
Citation: Finch M, Jones J, Yoong S, Wiggers J, Wolfenden L. Effectiveness of centre-based childcare interventions in increasing child physical activity: a systematic review and meta-analysis for policymakers and practitioners. Obes Rev. 2016;17(5):412–428. doi:10.1111/obr.12392. .</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="6">Abstract: CONTEXT: The review describes the effectiveness of physical activity interventions implemented in centre-based childcare services and (i) examines characteristics of interventions that may influence intervention effects; (ii) describes the effects of pragmatic interventions and non-pragmatic interventions; (iii) assesses adverse effects; and (iv) describes cost-effectiveness of interventions METHODS: Data sources were Cochrane Central Register of Controlled trials, MEDLINE, EMBASE, PsycINFO, ERIC, CINAHL, SCOPUS and SPORTDISCUS. Studies selected included randomized controlled trials conducted in centre-based childcare including an intervention to increase objectively measured physical activity in children aged less than 6 years. Data were converted into standardized mean difference (SMD) and analysed using a random effects model. RESULTS: Overall interventions significantly improved child physical activity (SMD 0.44; 95% confidence interval [CI]: 0.12-0.76). Significant effects were found for interventions that included structured activity (SMD 0.53; 95% CI: 0.12-0.94), delivery by experts (SMD 1.26; 95% CI: 0.20-2.32) and used theory (SMD 0.76; 95% CI: 0.08-1.44). Non-pragmatic (SMD 0.80; 95% CI: 0.12-1.48) but not pragmatic interventions (SMD 0.10; 95% CI:-0.13-0.33) improved child physical activity. One trial reported adverse events, and no trials reported cost data. CONCLUSIONS: Intervention effectiveness varied according</td></tr>
<tr><td>Purpose: To describe the effectiveness of PA interventions implemented in centre-based childcare services and (i) examine characteristics of interventions that may influence intervention effects; (ii) describe the effects of pragmatic interventions and non-pragmatic interventions; (iii) assess adverse effects; and (iv) describe cost-effectiveness of interventions.</td></tr>
<tr><td>Timeframe: Inception– September 2014</td></tr>
<tr><td>Total # of Studies: 17</td></tr>
<tr><td>Description of Intervention(s):
Interventions carried out in centre-based childcare with at least one component/strategy aimed at increasing the PA level of attending children (including educational, experiential, health promotion and/or structural or environmental interventions). Structured active lessons were included as an intervention strategy in 13 of the 17 trials. Other intervention strategies that were either included as a single component or as an additional component to a structured activity intervention included rearrangement of play spaces, addition of physical activity promoting play equipment/markings, and teacher engagement/role modelling with children during free play. One trial involved scheduling additional outdoor play time. Six of the trials also included a parent component along with service-based strategies, all of which were information/ education-focused (newsletters, information sheets, or workshops), with one also including a parent homework strategy. Of the interventions, nine included at least two intervention components.</td></tr>
<tr><td>Outcomes Addressed: PA: pedometers or accelerometers.
Sedentary Behavior an Outcome:
No</td></tr>
</table>

Examine cost, cost-effectivenesss or ROI: Not reported **Examine Cardiorespiratory Fitness as Outcome:** No	to intervention and trial design characteristics. Pragmatic trials were not effective, and information on cost and adverse effects was lacking. Evidence gaps remain for policymakers and practitioners regarding the effectiveness and feasibility of childcare-based physical activity interventions.
Populations Analyzed: Children 0–6	**Author-Stated Funding Source:** Hunter New England Population Health, the Hunter Medical Research Institute

<table>
<tr><th colspan="2">Childcare and Preschool</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Mehtala MA, Saakslahti AK, Inkinen ME, Poskiparta ME. A socio-ecological approach to physical activity interventions in childcare: a systematic review. Int J Behav Nutr Phys Act. 2014;11(1):22. doi:10.1186/1479-5868-11-22.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="6">Abstract: The promotion of physical activity (PA) in young children requires effective interventions. This article reviews the evidence on PA interventions in childcare by applying a socio-ecological approach. A computer-based literature search for intervention studies aimed at increasing children's PA levels was run across four databases: SPORTDiscus, ISI Web of Science, PsycINFO and ERIC. The participants had to be in childcare, aged 2-6-year-old, and their pre- and post-intervention PA levels measured. Selection was restricted to peer-reviewed publications and to studies conducted in childcare settings. Twenty-three studies met the inclusion criteria and their methodological quality was assessed. Seven studies exhibited high methodological quality; twelve were rated as moderate and four low. The effectiveness of the interventions was determined according to the post-intervention behavioral changes reported in children's PA. Fourteen studies found increases in PA levels or reductions in sedentary time, although the changes were modest. The data remain too limited to allow firm conclusions to be drawn on the effectiveness of the components mediating PA interventions, although PA-specific in-service teacher training seems a potential strategy. The findings of this review indicate that children's PA remained low and did not approach the 180 min/day criteria. It may be that more intensive multilevel and multicomponent interventions based on a comprehensive model are needed.</td></tr>
<tr><td>Purpose: To identify potential targets (modifiable intrapersonal, interpersonal, organizational, community, and/or policy level factors) and leverages for change in childcare-aged children's PA promotion programs in a childcare setting.</td></tr>
<tr><td>Timeframe: Inception–May 2013</td></tr>
<tr><td>Total # of Studies: 23</td></tr>
<tr><td>Description of Intervention(s): Interventions carried out in a childcare setting (daycare center, preschool, nursery, long daycare center) with at least at least one intervention component of the study targeted at increasing children's PA. Included structured PA, playground/time modifications, and teacher or parental involvement.</td></tr>
<tr><td>Outcomes Addressed: PA: accelerometers, pedometers, heart rate monitors, direct observation, proxy reports, or a combination of assessments.
Sedentary Behavior an Outcome: Yes</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI: Not reported
Examine Cardiorespiratory Fitness as Outcome: No</td></tr>
<tr><td>Populations Analyzed: Children 2–6</td><td>Author-Stated Funding Source: Not reported</td></tr>
</table>

<table>
<tr><th colspan="2">Childcare and Preschool</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Wolfenden L, Jones J, Williams CM, et al. Strategies to improve the implementation of healthy eating, physical activity and obesity prevention policies, practices or programmes within childcare services. Cochrane Database Syst Rev. Oct. 2016:CD011779. doi:10.1002/14651858.CD011779.pub2.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="6">Abstract: Background: Despite the existence of effective interventions and best-practice guideline recommendations for childcare services to implement policies, practices and programmes to promote child healthy eating, physical activity and prevent unhealthy weight gain, many services fail to do so. Objectives: The primary aim of the review was to examine the effectiveness of strategies aimed at improving the implementation of policies, practices or programmes by childcare services that promote child healthy eating, physical activity and/or obesity prevention. The secondary aims of the review were to: 1. describe the impact of such strategies on childcare service staff knowledge, skills or attitudes; 2. describe the cost or cost-effectiveness of such strategies; 3. describe any adverse effects of such strategies on childcare services, service staff or children; 4. examine the effect of such strategies on child diet, physical activity or weight status. Search methods: We searched the following electronic databases on 3 August 2015: the Cochrane Central Register of Controlled trials (CENTRAL), MEDLINE, MEDLINE In Process, EMBASE, PsycINFO, ERIC, CINAHL and SCOPUS. We also searched reference lists of included trials, handsearched two international implementation science journals and searched the World Health Organization International Clinical Trials Registry Platform (www.who.int/ictrp/) and ClinicalTrials.gov (www.clinicaltrials.gov). Selection criteria: We included any study (randomised or non-randomised) with a parallel control group that compared any strategy to improve the implementation of a healthy eating, physical activity or obesity prevention policy, practice or programme by staff of centre-based childcare services to no intervention, 'usual' practice or an alternative strategy. Data collection and analysis: The review authors independently screened abstracts and titles, extracted trial data and assessed risk of bias in pairs; we resolved discrepancies via consensus. Heterogeneity across studies precluded pooling of data and undertaking quantitative assessment via meta-analysis. However, we narratively</td></tr>
<tr><td>Purpose: To examine the effectiveness of strategies aimed at improving the implementation of policies, practices, or programmes by childcare services that promote child healthy eating, PA, and/or obesity prevention.</td></tr>
<tr><td>Timeframe: Inception–2015</td></tr>
<tr><td>Total # of Studies: 17</td></tr>
<tr><td>Description of Intervention(s): Interventions that aim to improve the implementation of any healthy eating, PA, or obesity prevention policy, practice, or programme in centre-based childcare services. Interventions included policy changes, workshops, consultations, and policy support. All included educational meetings and materials. Some also included audit and feedback, educational outreach visits or academic detailing, small incentives or financial grants, or use of opinion leaders.</td></tr>
<tr><td>Outcomes Addressed: PA: observational tool (Observation System for Recording Activity in Preschools) and self-report.
Sedentary Behavior an Outcome:
Yes</td></tr>
</table>

Examine cost, cost-effectivenesss or ROI: Not reported **Examine Cardiorespiratory Fitness as Outcome:** No	synthesised the trial findings by describing the effect size of the primary outcome measure for policy or practice implementation (or the median of such measures where a single primary outcome was not stated). Main results: We identified 10 trials as eligible and included them in the review. The trials sought to improve the implementation of policies and practices targeting healthy eating (two trials), physical activity (two trials) or both healthy eating and physical activity (six trials). Collectively the implementation strategies tested in the 10 trials included educational materials, educational meetings, audit and feedback, opinion leaders, small incentives or grants, educational outreach visits or academic detailing. A total of 1053 childcare services participated across all trials. Of the 10 trials, eight examined implementation strategies versus a usual practice control and two compared alternative implementation strategies. There was considerable study heterogeneity. We judged all studies as having high risk of bias for at least one domain.It is uncertain whether the strategies tested improved the implementation of policies, practices or programmes that promote child healthy eating, physical activity and/or obesity prevention. No intervention improved the implementation of all policies and practices targeted by the implementation strategies relative to a comparison group. Of the eight trials that compared an implementation strategy to usual practice or a no intervention control, however, seven reported improvements in the implementation of at least one of the targeted policies or practices relative to control. For these trials the effect on the primary implementation outcome was as follows: among the three trials that reported score-based measures of implementation the scores ranged from 1 to 5.1; across four trials reporting the proportion of staff or services implementing a specific policy or practice this ranged from 0% to 9.5%; and in three trials reporting the time (per day or week) staff or services spent implementing a policy or practice this ranged from 4.3 minutes to 7.7 minutes. The review findings also indicate that is it uncertain whether such interventions improve childcare service staff knowledge or attitudes (two trials), child physical activity (two trials), child weight status (two trials) or child diet (one trial). None of the included trials reported on the cost or cost-effectiveness of the intervention. One trial assessed the adverse effects of a physical activity intervention and found no difference in rates of child injury between groups. For all review outcomes, we rated the quality of the evidence as very low. The primary limitation of the review was the lack of conventional terminology in implementation science, which may have resulted in potentially relevant studies failing to be identified based on the search terms used in this review. Authors' conclusions: Current research provides weak and inconsistent evidence of the effectiveness of such strategies in improving the

	implementation of policies and practices, childcare service staff knowledge or attitudes, or child diet, physical activity or weight status. Further research in the field is required.
Populations Analyzed: Children preschool age	**Author-Stated Funding Source:** The Australian Prevention Partnership Centre

Community-Wide	
Systematic Review **Citation:** Baker PR, Francis DP, Soares J, Weightman AL, Foster C. Community wide interventions for increasing physical activity. *Cochrane Database Syst Rev*. Jan. 2015:Cd008366. doi:10.1002/14651858.CD008366.pub3.	
Level of Impact: Community	**Abstract:** BACKGROUND: Multi-strategic community wide interventions for physical activity are increasingly popular but their ability to achieve population level improvements is unknown. OBJECTIVES: To evaluate the effects of community wide, multi-strategic interventions upon population levels of physical activity. SEARCH METHODS: We searched the Cochrane Public Health Group Segment of the Cochrane Register of Studies,The Cochrane Library, MEDLINE, MEDLINE in Process, EMBASE, CINAHL, LILACS, PsycINFO, ASSIA, the British Nursing Index, Chinese CNKI databases, EPPI Centre (DoPHER, TRoPHI), ERIC, HMIC, Sociological Abstracts, SPORT Discus, Transport Database and Web of Science (Science Citation Index, Social Sciences Citation Index, Conference Proceedings Citation Index). We also scanned websites of the EU Platform on Diet, Physical Activity and Health; Health-Evidence.org; the International Union for Health Promotion and Education; the NIHR Coordinating Centre for Health Technology (NCCHTA); the US Centre for Disease Control and Prevention (CDC) and NICE and SIGN guidelines. Reference lists of all relevant systematic reviews, guidelines and primary studies were searched and we contacted experts in the field. The searches were updated to 16 January 2014, unrestricted by language or publication status. SELECTION CRITERIA: Cluster randomised controlled trials, randomised controlled trials, quasi-experimental designs which used a control population for comparison, interrupted time-series studies, and prospective controlled cohort studies were included. Only studies with a minimum six-month follow up from the start of the intervention to measurement of outcomes were included. Community wide interventions had to comprise at least two broad strategies aimed at physical activity for the whole population. Studies which randomised individuals from the same community were excluded. DATA COLLECTION AND ANALYSIS: At least two review authors independently extracted the data and assessed the risk of bias. Each study was assessed for the setting, the number of included components and their intensity. The primary outcome measures were grouped according to whether they were dichotomous (per cent physically active, per cent physically active during leisure time, and per cent physically inactive) or continuous (leisure time physical activity time (time spent)), walking (time spent), energy expenditure (as metabolic equivalents or METS)). For dichotomous measures we
Purpose: To determine the effects of community wide, multi-strategic interventions upon community levels of PA.	
Timeframe: January 1995–January 2014	
Total # of Studies: 33	
Description of Intervention(s): Community-wide interventions that included social marketing, individually counseling by health professionals, government and non government organizations to encourage participation in PA, working with community settings like schools, workplaces, or malls to increase PA, and environmental changes like bike paths and trails.	
Outcomes Addressed: PA: percentage of people active or inactive, frequency of physical activity, percentage meeting recommendations, percentage undertaking active travel; and other objective (for example accelerometers, pedometers) or subjective methods (for example self-reported questionnaires, diaries). **Sedentary Behavior an Outcome:** No	
Examine cost, cost-effectivenesss or ROI: Not Reported **Examine Cardiorespiratory Fitness as Outcome:** No	

	calculated the unadjusted and adjusted risk difference, and the unadjusted and adjusted relative risk. For continuous measures we calculated percentage change from baseline, unadjusted and adjusted. MAIN RESULTS: After the selection process had been completed, 33 studies were included. A total of 267 communities were included in the review (populations between 500 and 1.9 million). Of the included studies, 25 were set in high income countries and eight were in low income countries. The interventions varied by the number of strategies included and their intensity. Almost all of the interventions included a component of building partnerships with local governments or non-governmental organisations (NGOs) (29 studies). None of the studies provided results by socio-economic disadvantage or other markers of equity. However, of those included studies undertaken in high income countries, 14 studies were described as being provided to deprived, disadvantaged or low socio-economic communities. Nineteen studies were identified as having a high risk of bias, 10 studies were unclear, and four studies had a low risk of bias. Selection bias was a major concern with these studies, with only five studies using randomisation to allocate communities. Four studies were judged as being at low risk of selection bias although 19 studies were considered to have an unclear risk of bias. Twelve studies had a high risk of detection bias, 13 an unclear risk and four a low risk of bias. Generally, the better designed studies showed no improvement in the primary outcome measure of physical activity at a population level.All four of the newly included, and judged to be at low risk of bias, studies (conducted in Japan, United Kingdom and USA) used randomisation to allocate the intervention to the communities. Three studies used a cluster randomised design and one study used a stepped wedge design. The approach to measuring the primary outcome of physical activity was better in these four studies than in many of the earlier studies. One study obtained objective population representative measurements of physical activity by accelerometers, while the remaining three low-risk studies used validated self-reported measures. The study using accelerometry, conducted in low income, high crime communities of USA, emphasised social marketing, partnership with police and environmental improvements. No change in the seven-day average daily minutes of moderate to vigorous physical activity was observed during the two years of operation. Some program level effect was observed with more people walking in the intervention community, however this result was not evident in the whole community. Similarly, the two studies conducted in the

	United Kingdom (one in rural villages and the other in urban London; both using communication, partnership and environmental strategies) found no improvement in the mean levels of energy expenditure per person per week, measured from one to four years from baseline. None of the three low risk studies reporting a dichotomous outcome of physical activity found improvements associated with the intervention. Overall, there was a noticeable absence of reporting of benefit in physical activity for community wide interventions in the included studies. However, as a group, the interventions undertaken in China appeared to have the greatest possibility of success with high participation rates reported. Reporting bias was evident with two studies failing to report physical activity measured at follow up. No adverse events were reported. The data pertaining to cost and sustainability of the interventions were limited and varied. AUTHORS' CONCLUSIONS: Although numerous studies have been undertaken, there is a noticeable inconsistency of the findings in the available studies and this is confounded by serious methodological issues within the included studies. The body of evidence in this review does not support the hypothesis that the multi-component community wide interventions studied effectively increased physical activity for the population, although some studies with environmental components observed more people walking.
Populations Analyzed: All ages	**Author-Stated Funding Source:** National Institute for Health Research, internal sources of funding for individual authors

<table>
<tr><th colspan="2">Community-Wide</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Brown DR, Soares J, Epping JM et al. Stand-alone mass media campaigns to increase physical activity: a Community Guide updated review. Am J Prev Med. 2012;43(5):551-561. doi:10.1016/j.amepre.2012.07.035.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="5">Abstract: CONTEXT: The goal of the systematic review described in this summary was to determine the effectiveness of stand-alone mass media campaigns to increase physical activity at the population level. This systematic review is an update of a Community Guide systematic review and Community Preventive Services Task Force recommendation completed in 2001. EVIDENCE ACQUISITION: Updated searches for literature published from 1980 to 2008 were conducted in 11 databases. Of 267 articles resulting from the literature search, 16 were selected for full abstraction, including the three studies from the original 2001 review. Standard Community Guide methods were used to conduct the systematic evidence review. EVIDENCE SYNTHESIS: Physical activity outcomes were assessed using a variety of self-report measures with duration intervals ranging from 6 weeks to 4 years. Ten studies using comparable outcome measures documented a median absolute increase of 3.4 percentage points (interquartile interval: 2.4 to 4.2 percentage points), and a median relative increase of 6.7% (interquartile interval: 3.0% to 14.1%), in self-reported physical activity levels. The remaining six studies used alternative outcome measures: three evaluated changes in self-reported time spent in physical activity (median relative change, 4.4%; range of values, 3.1%-18.2%); two studies used a single outcome measure and found that participants reported being more active after the campaign than before it; and one study found that a mass media weight-loss program led to a self-reported increase in physical activity. CONCLUSIONS: The findings of this updated systematic review show that intervention effects, based wholly on self-reported measures, were modest and inconsistent. These findings did not lead the Task Force to change its earlier conclusion of insufficient evidence to determine the effectiveness of stand-alone mass media campaigns to increase physical activity. This paper also discusses areas needing future research to strengthen the evidence base. Finally, studies published between 2009 and 2011, after the Task Force finding was reached, and briefly summarized here, are shown to support that finding.</td></tr>
<tr><td>Purpose: To evaluate the effectiveness of stand-alone mass media campaigns to increase PA.</td></tr>
<tr><td>Timeframe: 1980–2008</td></tr>
<tr><td>Total # of Studies: 16</td></tr>
<tr><td>Description of Intervention(s): Mass media campaigns when implemented alone are interventions that rely on mass media channels to deliver messages about PA to large and relatively undifferentiated audiences.</td></tr>
<tr><td>Outcomes Addressed: Changes in the proportion of people who self-reported PA: some combination of reported frequency, intensity, and/or duration of activity). Changes in time spent in PA. Changes in single-item reports of whether respondents thought that they were more physically active as a result of a campaign.
Sedentary Behavior an Outcome: No</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI: Several studies reported costs of mass media campaigns, which ranged from $191,000 for a 1-year campaign, 24 to $339 million for a 4-year campaign. In one study, costs were evaluated in conjunction with various media and their impact on physical activity behavior. A systematic cost-effectiveness analysis was not conducted in the studies reviewed.
Examine Cardiorespiratory Fitness as Outcome: No</td></tr>
<tr><td>Populations Analyzed: Youth 9–17, Adults</td><td>Author-Stated Funding Source: Not reported</td></tr>
</table>

<table>
<tr><th colspan="2">Community-Wide</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Laine J, Kuvaja-Kollner V, Pietila E, Koivuneva M, Valtonen H, Kankaanpaa E. Cost-effectiveness of population-level physical activity interventions: a systematic review. Am J Health Promot. 2014;29(2):71-80. doi:10.4278/ajhp.131210-LIT-622.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="6">Abstract: OBJECTIVE: This systematic review synthesizes the evidence on the cost-effectiveness of population-level interventions to promote physical activity.
DATA SOURCE: A systematic literature search was conducted between May and August 2013 in four databases: PubMed, Scopus, Web of Science, and SPORTDiscus.
STUDY INCLUSION AND EXCLUSION CRITERIA: Only primary and preventive interventions aimed at promoting and maintaining physical activity in wide population groups were included. An economic evaluation of both effectiveness and cost was required. Secondary interventions and interventions targeting selected population groups or focusing on single individuals were excluded.
DATA EXTRACTION: Interventions were searched for in six different categories: (1) environment, (2) built environment, (3) sports clubs and enhanced access, (4) schools, (5) mass media and community-based, and (6) workplace.
DATA SYNTHESIS: The systematic search yielded 2058 articles, of which 10 articles met the selection criteria. The costs of interventions were converted to costs per person per day in 2012 U.S. dollars. The physical activity results were calculated as metabolic equivalent of task hours (MET-hours, or MET-h) gained per person per day. Cost-effectiveness ratios were presented as dollars per MET-hours gained. The intervention scale and the budget impact of interventions were taken into account.
RESULTS: The most efficient interventions to increase physical activity were community rail-trails ($.006/MET-h), pedometers ($.014/MET-h), and school health education programs ($.056/MET-h).
CONCLUSION: Improving opportunities for walking and biking seems to increase physical activity cost-effectively. However, it is necessary to be careful in generalizing the results because of the small number of studies. This review provides important information for decision makers.</td></tr>
<tr><td>Purpose: To synthesize the evidence on the cost effectiveness of population-level interventions to promote PA.</td></tr>
<tr><td>Timeframe: Inception– June 2013</td></tr>
<tr><td>Total # of Studies: 10</td></tr>
<tr><td>Description of Intervention(s): Population-level or community-level interventions supporting active living and reducing a sedentary lifestyle.</td></tr>
<tr><td>Outcomes Addressed: Change in the amount of PA.
Sedentary Behavior an Outcome: No</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI: The cost-effectiveness of interventions was calculated as cost-effectiveness ratios (CE ratios), i.e., cost per person per day divided by MET-hours gained per person per day. Six interventions each had a total cost of over $1 million; the most expensive interventions cost over $500 million. For one intervention, the total cost of the intervention was not available.
Examine Cardiorespiratory Fitness as Outcome: No</td></tr>
<tr><td>Populations Analyzed: All ages</td><td>Author-Stated Funding Source: Finnish Ministry of Education and Culture, the University of Eastern Finland</td></tr>
</table>

<table>
<tr><th colspan="2">Faith-Based</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Bopp M, Peterson JA, Webb BL. A comprehensive review of faith-based physical activity interventions. Am J Lifestyle Med. 2012;6(6):460–478. doi:10.1177/1559827612439285.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="6">Abstract: This review provides a summary of physical activity interventions delivered in faith-based organizations. Electronic databases were searched to identify relevant studies. After screening, a total of n = 27 articles matched our inclusion criteria; 19 were identified as faith-based interventions (some spiritual or Biblical element included in the intervention) and 8 as faith-placed interventions (no spiritual component). Among all interventions, the most common research design was a randomized controlled trial. African American women were the most commonly targeted population and predominately Black churches were the most common setting. The majority of studies used self-report measures of physical activity. Most of the interventions did not use a theoretical framework to shape the intervention and weekly group sessions were the most frequently reported intervention approach. Overall, 12 of the faith-based and 4 of the faith-placed interventions resulted in increases in physical activity. Recommendations for future faith-based physical activity interventions include more rigorous study design, improved measures of physical activity, larger sample sizes, longer study and follow-up periods, and the use of theory in design and evaluation. Although limited, literature on faith-based physical activity interventions shows significant promise for improving physical activity participation and associated health outcomes.</td></tr>
<tr><td>Purpose: To systematically examine the existing literature describing faith-based PA interventions, outline relevant strengths and weaknesses of the literature, and suggest recommendations for future studies.</td></tr>
<tr><td>Timeframe: Inception–May 2011</td></tr>
<tr><td>Total # of Studies: 27</td></tr>
<tr><td>Description of Intervention(s):
Interventions that offered some degree of spiritual/religious involvement, reference to the Bible or other faith traditions, was institutionalized into a faith-based organization, or was delivered by trained faith-based organizations volunteers that included PA as a behavioral target.</td></tr>
<tr><td>Outcomes Addressed: PA behavior: self-report or objective monitoring (i.e., accelerometers, pedometers).
Sedentary Behavior an Outcome:
Yes</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI:
Not reported
Examine Cardiorespiratory Fitness as Outcome: No</td></tr>
<tr><td>Populations Analyzed: All ages</td><td>Author-Stated Funding Source: Not reported</td></tr>
</table>

<table>
<tr><th colspan="2">Faith-Based</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Parra MT, Porfírio GJM, Arredondo EM. Physical activity interventions in faith-based organizations: a systematic review. Am J Health Promot. 2017. doi:10.1177/0890117116688107.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="5">Abstract: Objective: To review and assess the effectiveness of physical activity interventions delivered in faith-based organizations.
Data Source: We searched the Cochrane Library, DoPHER, EMBASE, LILACS, MEDLINE, PsycINFO, WHO ICTRP, and Clinicaltrials.gov databases until January 2016, without restriction of language or publication date.
Study Inclusion and Exclusion Criteria: Randomized and nonrandomized controlled trials investigating physical activity interventions for adults delivered in faith-based organizations.
Data Extraction: Two independent reviewers extracted data and assessed study methodological quality.
Data Synthesis: We used relative risk and mean difference with 95% confidence interval to estimate the effect of the inter-ventions on measures of physical activity, physical fitness, and health.
Results: The review included 18 studies. Study participants were predominantly female, and the majority of trials were con-ducted in the United States. Study heterogeneity did not allow us to conduct meta-analyses. Although interventions delivered in faith-based organizations increased physical activity and positively influenced measures of health and fitness in participants, the quality of the evidence was very low.
Conclusion: Faith-based organizations are promising settings to promote physical activity, consequently addressing health disparities. However, high-quality randomized clinical trials are needed to adequately assess the effectiveness of interventions delivered in faith-based organizations.</td></tr>
<tr><td>Purpose: To review and assess the effectiveness of PA interventions delivered in faith-based organizations.</td></tr>
<tr><td>Timeframe: Inception–January 2016</td></tr>
<tr><td>Total # of Studies: 18</td></tr>
<tr><td>Description of Intervention(s): Randomized controlled trials (RCTs) and non-RCTs with a control or comparison group delivered in faith-based organizations containing at least 1 active physical activity component. Three studies were faith placed, whereas all others were faith based.</td></tr>
<tr><td>Outcomes Addressed: PA: time exercising in different intensities (light, moderate, and vigorous), total physical activity, leisure physical activity time, or percentage of participants meeting recommendations.
Sedentary Behavior an Outcome: No</td><td rowspan="2">Author-Stated Funding Source: CAPES Foundation, Ministry of Education of Brazil</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI: Not reported
Examine Cardiorespiratory Fitness as Outcome: Yes</td></tr>
<tr><td>Populations Analyzed: Adults ≥18</td></tr>
</table>

Nurse-Delivered	
Systematic Review **Citation:** Richards EA, Cai Y. Physical activity outcomes of nurse-delivered lifestyle interventions. *Home Healthc Now.* 2016;34(2):93–101. doi:10.1097/NHH.0000000000000334.	
Level of Impact: Community	**Abstract:** Promotion of physical activity has been a public health priority for decades. Over two million home healthcare nurses are at the front line to deliver effective health education and health promotion interventions in the United States. The purpose of this systematic review is to examine the effectiveness of nurse-delivered lifestyle physical interventions on physical activity outcomes conducted in home settings. Computerized database and ancestry search strategies located distinct intervention trials between 1990 and 2015. A total of eight quantitative studies were reviewed. Four of the eight studies were randomized control trials and four studies used an uncontrolled pretest-posttest design. The eight studies represented a total of 1,221 participants with mean ages from 43 to 81. Study sample sizes ranged from 16 to 504. Seven of the eight studies demonstrated modest effect of nurse-delivered home-based interventions on physical activity behaviors. Home-based physical activity promotion was most often incorporated into secondary prevention of postacute diseases, chronic disease management, or disease prevention/health promotion. Findings indicate that nurse-delivered home-based physical activity promotion show overall effectiveness in general adult populations. Possible effective intervention domains were also discussed in this review to guide future home-based health promotion. More large randomized controlled trials with longer study/follow-up periods and studies with cost-effectiveness data are warranted in future research.
Purpose: To describe nurse-delivered PA interventions conducted in home settings and determine intervention attributes that led to positive changes in PA.	
Timeframe: 1990–2015	
Total # of Studies: 8	
Description of Intervention(s): Lifestyle interventions with a physical activity component conducted by a registered nurse or nurse practitioner that were conducted face-to-face at participants' home. Duration of home visits ranged from 30 to 90 minutes; multiple contacts with the nurse. Physical activity defined as any body movement that works the muscles and requires more energy than resting.	
Outcomes Addressed: Adherence to an exercise regime: daily steps, walking, moderate-to-vigorous PA, exercising regularly, total general exercise, frequency of weekly exercise, or total PA. **Sedentary Behavior an Outcome:** No	
Examine cost, cost-effectivenesss or ROI: Not reported **Examine Cardiorespiratory Fitness as Outcome:** No	
Populations Analyzed: Adults 20–86	**Author-Stated Funding Source:** Not reported

<table>
<tr><th colspan="2">Nurse-Delivered</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Richards EA, Cai Y. Integrative review of nurse-delivered community-based physical activity promotion. Appl Nurs Res. 2016;31:132-138. doi:10.1016/j.apnr.2016.02.004.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="8">Abstract: PURPOSE: The purpose of this integrative review is to 1) describe intervention attributes, 2) describe the role of nurses in community PA promotion, and 3) describe the efficacy of the interventions in terms of PA behavior change. METHODS: Computerized database and ancestry search strategies located distinct intervention trials between 1990 and 2015. RESULTS: Thirteen national and international studies with 2,353 participants were reviewed. Multi-dose, face-to-face, group-based interventions with or without individual-based contacts for 6months or less were the most common intervention delivery modes. Only 40% (n=5) of the studies integrated health behavior theory into intervention design. Less than half of the studies demonstrated efficacy in increasing PA. CONCLUSIONS: Results suggest that group-based community interventions, such as exercise classes, group walking and group education/counseling, may be more effective in increasing PA compared to individual-based education. Additional rigorously designed studies are warranted to explore the indicators for successful community-based PA promotion.</td></tr>
<tr><td>Purpose: To: (1) describe intervention attributes; (2) describe the role of nurses in community PA promotion; and (3) describe the efficacy of the interventions in terms of PA behavior change.</td></tr>
<tr><td>Timeframe: 1990–2015</td></tr>
<tr><td>Total # of Studies: 13</td></tr>
<tr><td>Description of Intervention(s):
Community-based physical activity intervention studies with a nurse having some direct interaction with the intervention recipient.</td></tr>
<tr><td>Outcomes Addressed: PA behaviors: self-reported, daily step count (pedometer), duration, intensity and frequency of walking, frequency of PA, change in mean PA score, self-reported aerobic activity and stretching exercise, vigorous exercise, total leisure and work activity, self-reported moderate PA duration, duration and
frequency of activities, eercise classes attendance rate.
Sedentary Behavior an Outcome: No</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI: Not reported
Examine Cardiorespiratory Fitness as Outcome: No</td></tr>
<tr><td>Populations Analyzed: Adults</td><td>Author-Stated Funding Source: Not reported</td></tr>
</table>

<table>
<tr><th colspan="2">Primary Care</th></tr>
<tr><td colspan="2">Meta-Analysis
Citation: Arsenijevic J, Groot W. Physical activity on prescription schemes (PARS): do programme characteristics influence effectiveness? Results of a systematic review and meta-analyses. BMJ Open. 2017;7(2):1-14.e012156. doi:10.1136/bmjopen-2016-012156.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="6">Abstract: BACKGROUND: Physical activity on prescription schemes (PARS) are health promotion programmes that have been implemented in various countries. The aim of this study was to outline the differences in the design of PARS in different countries. This study also explored the differences in the adherence rate to PARS and the self-reported level of physical activity between PARS users in different countries. METHOD: A systematic literature review and meta-analyses were conducted. We searched PubMed and EBASCO in July 2015 and updated our search in September 2015. Studies that reported adherence to the programme and self-reported level of physical activity, published in the English language in a peer-reviewed journal since 2000, were included. The difference in the pooled adherence rate after finishing the PARS programme and the adherence rate before or during the PARS programme was 17% (95% CI 9% to 24%). The difference in the pooled physical activity was 0.93 unit score (95 CI -3.57 to 1.71). For the adherence rate, a meta-regression was conducted. RESULTS: In total, 37 studies conducted in 11 different countries met the inclusion criteria. Among them, 31 reported the adherence rate, while the level of physical activity was reported in 17 studies. Results from meta-analyses show that PARS had an effect on the adherence rate of physical activity, while the results from the meta-regressions show that programme characteristics such as type of chronic disease and the follow-up period influenced the adherence rate. CONCLUSIONS: The effects of PARS on adherence and self-reported physical activity were influenced by programme characteristics and also by the design of the study. Future studies on the effectiveness of PARS should use a prospective longitudinal design and combine quantitative and qualitative data. Furthermore, future evaluation studies should distinguish between evaluating the adherence rate and the self-reported physical activity among participants with different chronic diseases.</td></tr>
<tr><td>Purpose: To outline the differences in design and effectiveness of PA on prescription schemes (PARS) programs in different countries.</td></tr>
<tr><td>Timeframe: 2000–September 2015</td></tr>
<tr><td>Total # of Studies: 37 (17 PA)</td></tr>
<tr><td>Description of Intervention(s): Physical activity on PARS program duration varies by country but ranges from 8 weeks to 6 months. Programs were delivered either as a facility based supervised intervention or home-based activity and focused primarily on aerobic exercise.</td></tr>
<tr><td>Outcomes Addressed: Self-reported level of PA score: 7-day Physical Activity Recall questionnaire.
Sedentary Behavior an Outcome: No</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI: In the Netherlands, physical activity on prescription schemes participants pay a small fee of approximately 21 euro. But if they participate in more than 80% of the meetings, they receive 10 euro back.
Examine Cardiorespiratory Fitness as Outcome: No</td></tr>
<tr><td>Populations Analyzed: Adults</td><td>Author-Stated Funding Source: European Union</td></tr>
</table>

<table>
<tr><th colspan="2">Primary Care</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Attwood S, van Sluijs E, Sutton S. Exploring equity in primary-care-based physical activity interventions using PROGRESS-Plus: a systematic review and evidence synthesis. Int J Behav Nutr Phys Act. 2016;13:60. doi:10.1186/s12966-016-0384-8.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="6">Abstract: BACKGROUND: Little is known about equity effects in primary care based physical activity interventions. This review explored whether differences in intervention effects are evident across indicators of social disadvantage, specified under the acronym PROGRESS-Plus (place of residence, race/ethnicity, occupation, gender, religion, education, social capital, socioeconomic status, plus age, disability and sexual orientation). METHODS: Six bibliographic databases were systematically searched for randomised controlled trials (RCTs) of physical activity interventions conducted in primary care. Harvest plots were used to synthesize findings from RCTs reporting subgroup or interaction analyses examining differences in intervention effects across levels of at least one PROGRESS-Plus factor. RESULTS: The search yielded 9052 articles, from which 173 eligible RCTs were identified. Despite PROGRESS-Plus factors being commonly measured (N = 171 RCTs), differential effect analyses were infrequently reported (N = 24 RCTs). Where reported, results of equity analyses suggest no differences in effect across levels or categories of place of residence (N = 1RCT), race (N = 4 RCTs), education (N = 3 RCTs), socioeconomic status (N = 3 RCTs), age (N = 16 RCTs) or disability (N = 2 RCTs). Mixed findings were observed for gender (N = 22 RCTs), with some interventions showing greater effect in men than women and others vice versa. Three RCTs examined indicators of social capital, with larger post-intervention differences in physical activity levels between trial arms found in those with higher baseline social support for exercise in one trial only. No RCTs examined differential effects by participant occupation, religion or sexual orientation. CONCLUSION: The majority of RCTs of physical activity interventions in primary care record sufficient information on PROGRESS-Plus factors to allow differential effects to be studied. However, very few actually report details of relevant analyses to determine which population subgroups may stand to benefit or be further disadvantaged by intervention efforts.</td></tr>
<tr><td>Purpose: To scope the existing literature in order to summarize how PROGRESS-Plus factors (place of residence, race/ethnicity, occupation, gender, religion, education, social capital, socioeconomic status, plus age, disability and sexual orientation) are reported in published random controlled trials of physical activity interventions conducted in primary care and to synthesize information on differences in intervention effects across levels or groups of these social stratifiers.</td></tr>
<tr><td>Timeframe: Inception–March 2016</td></tr>
<tr><td>Total # of Studies: 200 (24 in evidence synthesis)</td></tr>
<tr><td>Description of Intervention(s):
PA intervention length varied from 3–24 months as did the content and intensity of interventions, mode of delivery (face-to-face, telephone, or computer based) and the health professionals who delivered the intervention (physicians, nurses, or exercise professionals).</td></tr>
<tr><td>Outcomes Addressed: Self-report measures of PA and objective measures of PA: accelerometer and submaximal metabolic equivalent of tasks.
Sedentary Behavior an Outcome:
No</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI: Not reported
Examine Cardiorespiratory Fitness as Outcome: No</td></tr>
<tr><td>Populations Analyzed: Adults ≥16</td><td>Author-Stated Funding Source: British Heart Foundation, Cancer Research UK, Economic and Social Research Council, Medical Research Council, the National Institute for Health Research, the Wellcome Trust, the Medical Research Council.</td></tr>
</table>

<table>
<tr><th colspan="2">Primary Care</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Bully P, Sanchez A, Zabaleta-del-Olmo E, Pombo H, Grandes G. Evidence from interventions based on theoretical models for lifestyle modification (physical activity, diet, alcohol and tobacco use) in primary care settings: a systematic review. Prev Med. 2015;76(Suppl):S76-S93. doi:10.1016/j.ypmed.2014.12.020.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="6">Abstract: OBJECTIVE: To determine the effectiveness of health promotion interventions based on theoretical models of behavioral change to modify the main lifestyle factors (physical activity, diet, alcohol and tobacco) in adults receiving primary health care (PHC). METHODS: We searched the MEDLINE and Cochrane Database of Systematic Reviews from January 2000 to December 2012. Two reviewers independently performed the first screening of titles and abstracts, the methodological quality assessment using the lecturacritica.com tool, and the extraction of necessary data to systematize the available information. RESULTS: Only few studies met the inclusion criteria (17 studies from 30 articles). Thirteen were randomized controlled trials, three systematic reviews, and one observational study. The transtheoretical model was the most frequent (13 studies), and obtained strong evidence of its effectiveness for dietary interventions in the short-term and for smoking cessation interventions in the long-term as compared to usual PHC practice. Limited evidence was found for smoking cessation interventions based in the social cognitive theory. CONCLUSION: There are few studies that explicitly link intervention strategies and theories of behavioral change. A rigorous evaluation of the theoretical principles could help researchers and practitioners to understand how and why interventions succeed or fail.</td></tr>
<tr><td>Purpose: To determine the effectiveness of health promotion interventions based on theoretical models of behavioral change to modify the main lifestyle factors (physical activity, diet, alcohol, and tobacco) in adults receiving primary health care.</td></tr>
<tr><td>Timeframe: 2000–2012</td></tr>
<tr><td>Total # of Studies: 30</td></tr>
<tr><td>Description of Intervention(s): Interventions carried out in a primary health care setting with either a single or multiple behavioral focus with the objective of promoting PA. Promotion of PA involved counselling sessions, provision of PA information, and consistent follow up/reminders regarding PA.</td></tr>
<tr><td>Outcomes Addressed: Level of PA: self-reported or objectively measured change.
Sedentary Behavior an Outcome: No</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI: Not reported
Examine Cardiorespiratory Fitness as Outcome: No</td></tr>
<tr><td>Populations Analyzed: Adults</td><td>Author-Stated Funding Source: Network for Prevention and Health Promotion in Primary Care, Institute of Health Carlos III of the Ministry of Economy and Competitiveness (Spain), the European Union ERDF</td></tr>
</table>

<table>
<tr><th colspan="2">Primary Care</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Denison E, Vist GE, Underland, V, Berg RC. Interventions aimed at increasing the level of physical activity by including organised follow-up: a systematic review of effect. BMC Fam Prac. 2014;15(1):2-24. doi:10.1186/1471-2296-15-120.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="6">Abstract: Background Organised follow-up is a common feature of several strategies at the primary health care level to promote health behaviour change, e.g. to increase physical activity. In Norway, municipal 'healthy living' centres run by health care personnel are established to offer counselling and organised follow-up of health behaviour change during a 12-week programme. We report the results of a systematic review commissioned by the Norwegian Directorate of Health concerning organised follow-up to improve physical activity. Methods We searched ten electronic databases up to June 2012, reference lists of included publications, and relevant journals. Study selection and quality risk of bias assessment were carried out independently. Data were synthesised narratively due to heterogeneity of measurements of physical activity. The GRADE approach was used to assess our confidence in the effect estimate for each outcome in each comparison. Results Fourteen randomised controlled trials from seven countries and with a total of 5,002 participants were included in the systematic review. All studies were carried out in primary care or community settings. The interventions comprised referral to supervised group physical activity (2 studies), referral to local resources with follow-up (6 studies), and self organised physical activity with follow-up (6 studies). The narrative synthesis, comprising a total of 39 comparisons, indicated effects of self-organised physical activity with follow-up (compared to both advice and no treatment) and referral to local resources with follow-up (compared to advice) in some of the comparisons where we rated our confidence in the effect estimates as moderate. However, the results indicated no difference between intervention and control groups for the majority of comparisons. Follow-up in the studies was mainly short term with the longest follow-up 9 months post-treatment. We rated our confidence in the effect estimates as low or very low in most comparisons, both for positive and neutral results. Conclusions The results of this systematic review indicate considerable uncertainty concerning effects of organised follow-up during 10-14 weeks on physical activity. Major methodological problems concerning the measurement of physical activity are discussed.</td></tr>
<tr><td>Purpose: To: (1) systematically review and report the results of relevant studies concerning effects of organised follow-up on PA; and (2) discuss issues in data synthesis and interpretation of results from nonstandardised reporting of PA outcomes and measurement in the included studies.</td></tr>
<tr><td>Timeframe: Inception–October 2011</td></tr>
<tr><td>Total # of Studies: 14</td></tr>
<tr><td>Description of Intervention(s): Randomized controlled trials with organized follow-up aiming to support increased PA. Interventions were categorized as referral to supervised group PA, referral to local resources with follow-up, and self-organised PA with follow-up. Total participant contact time over 10–12 weeks generally varied between one and four hours, except for the supervised group PA which varied between 20 and 36 hours. The interventions were mainly delivered by exercise specialists.</td></tr>
<tr><td>Outcomes Addressed: PA: self-reported by questionnaire, accelermoter, or ergometer.
Sedentary Behavior an Outcome: No</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI: No
Examine Cardiorespiratory Fitness as Outcome: Yes</td></tr>
<tr><td>Populations Analyzed: Adults ≥18</td><td>Author-Stated Funding Source: Not reported</td></tr>
</table>

<table>
<tr><th colspan="2">Primary Care</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Gagliardi AR, Abdallah F, Faulkner G, Ciliska D, Hicks A. Factors contributing to the effectiveness of physical activity counselling in primary care: a realist systematic review. Patient Educ Couns. 2015;98(4):412–419. doi:10.1016/j.pec.2014.11.020.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="5">Abstract: OBJECTIVE: Physical activity (PA) counselling in primary care increases PA but is not consistently practiced. This study examined factors that optimise the delivery and impact of PA counselling. METHODS: A realist systematic review based on the PRECEDE-PROCEED model and RAMESES principles was conducted to identify essential components of PA counselling. MEDLINE, EMBASE, Cochrane Library, PsycINFO, and Physical Education Index were searched from 2000 to 2013 for studies that evaluated family practice PA counselling. RESULTS: Of 1546 articles identified, 10 were eligible for review (3 systematic reviews, 5 randomised controlled trials, 2 observational studies). Counselling provided by clinicians or counsellors alone that explored motivation increased self-reported PA at least 12 months following intervention. Multiple sessions may sustain increased PA beyond 12 months. CONCLUSION: Given the paucity of eligible studies and limited detail reported about interventions, further research is needed to establish the optimal design and delivery of PA counselling. Research and planning should consider predisposing, reinforcing and enabling design features identified in these studies. PRACTICE IMPLICATIONS: Since research shows that PA counselling promotes PA but is not widely practiced, primary care providers will require training and tools to operationalize PA counselling.</td></tr>
<tr><td>Purpose: To identify the predisposing, reinforcing, and enabling factors that optimize the effectiveness of PA counselling.</td></tr>
<tr><td>Timeframe: 2000–2013</td></tr>
<tr><td>Total # of Studies: 10</td></tr>
<tr><td>Description of Intervention(s):
PA counselling alone or combined with information, prescription, or tools at the counselling sessions by one or more members of the primary care team in family practice office settings.</td></tr>
<tr><td>Outcomes Addressed: PA: self-reported or objectively assessed.
Sedentary Behavior an Outcome: No</td><td rowspan="2">Author-Stated Funding Source: Canadian Institutes of Health Research</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI: $91.43 Canadian per participant per month
Examine Cardiorespiratory Fitness as Outcome: No</td></tr>
<tr><td>Populations Analyzed: Adults 18–64</td></tr>
</table>

<table>
<tr><th colspan="2">Primary Care</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Lamming L, Pears S, Mason D; VBI Programme Team. What do we know about brief interventions for physical activity that could be delivered in primary care consultations? A systematic review of reviews. Prev Med. 2017;99:152–163. doi:10.1016/j.ypmed.2017.02.017.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="6">Abstract: This systematic review of reviews aims to investigate how brief interventions (BIs) are defined, whether they increase physical activity, which factors influence their effectiveness, who they are effective for, and whether they are feasible and acceptable. We searched CINAHL, Cochrane database of systematic reviews, DARE, HTA database, EMBASE, MEDLINE, PsycINFO, Science Citation Index-Expanded and Social Sciences Citation Index, and Scottish Intercollegiate Guidelines Network from their inception until May 2015 to identify systematic reviews of the effectiveness of BIs aimed at promoting physical activity in adults, reporting a physical activity outcome and at least one BI that could be delivered in a primary care setting. A narrative synthesis was conducted. We identified three specific BI reviews and thirteen general reviews of physical activity interventions that met the inclusion criteria. The BI reviews reported varying definitions of BIs, only one of which specified a maximum duration of 30min. BIs can increase self-reported physical activity in the short term, but there is insufficient evidence about their long-term impact, their impact on objectively measured physical activity, and about the factors that influence their effectiveness, feasibility and acceptability. Current definitions include BIs that are too long for primary care consultations. Practitioners, commissioners and policy makers should be aware of this when interpreting evidence about BIs, and future research should develop and evaluate very brief interventions (of 5min or less) that could be delivered in a primary care consultation.</td></tr>
<tr><td>Purpose: To identify how brief interventions are defined, whether interventions defined as brief increased self-reported and objectively measured PA, which factors influenced the effectiveness of brief interventions, who brief interventions were effective for, and whether brief interventions were feasible and acceptable.</td></tr>
<tr><td>Timeframe: Inception–May 2015</td></tr>
<tr><td>Total # of Studies: 16</td></tr>
<tr><td>Description of Intervention(s):
Brief interventions consisted of a single core consultation or a consultation that had a maximum duration of 30 minutes in a primary care setting with the purpose of increasing PA. The interventions were multi-component and used a combination of verbal advice with or without physical information materials, counselling, motivational interviewing, and follow-up components.</td></tr>
<tr><td>Outcomes Addressed: PA: self-reported and objective measures in the short and long term.
Sedentary Behavior an Outcome: No</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI: Not reported
Examine Cardiorespiratory Fitness as Outcome: No</td></tr>
<tr><td>Populations Analyzed: Adults</td><td>Author-Stated Funding Source: National Institute for Health Research</td></tr>
</table>

Primary Care	
Systematic Review **Citation:** Melvin CL, Jefferson MS, Rice LJ, et al. A systematic review of lifestyle counseling for diverse patients in primary care. *Prev Med*. 2017;100:67–75. doi:10.1016/j.ypmed.2017.03.020.	
Level of Impact: Community	**Abstract:** Prior research and systematic reviews have examined strategies related to weight management, less is known about lifestyle and behavioral counseling interventions optimally suited for implementation in primary care practices generally, and among racial and ethnic patient populations. Primary care practitioners may find it difficult to access and use available research findings on effective behavioral and lifestyle counseling strategies and to assess their effects on health behaviors among their patients. This systematic review compiled existing evidence from randomized trials to inform primary care providers about which lifestyle and behavioral change interventions are shown to be effective for changing patients' diet, physical activity and weight outcomes. Searches identified 444 abstracts from all sources (01/01/2004-05/15/2014). Duplicate abstracts were removed, selection criteria applied and dual abstractions conducted for 106 full text articles. As of June 12, 2015, 29 articles were retained for inclusion in the body of evidence. Randomized trials tested heterogeneous multi-component behavioral interventions for an equally wide array of outcomes in three population groups: diverse patient populations (23 studies), African American patients only (4 studies), and Hispanic/Mexican American/Latino patients only (2 studies). Significant and consistent findings among diverse populations showed that weight and physical activity related outcomes were more amenable to change via lifestyle and behavioral counseling interventions than those associated with diet modification. Evidence to support specific interventions for racial and ethnic minorities was promising, but insufficient based on the small number of studies.
Purpose: To compile existing evidence from randomized trials about lifestyle and behavioral change strategies shown to be effective for changing patient outcomes related to diet, PA, and weight loss and/or body mass index for samples of diverse patient populations and patients in racial and ethnic minority groups in primary care settings.	
Timeframe: 2004–May 2014	
Total # of Studies: 29	
Description of Intervention(s): Largely patient-focused lifestyle individual and group counseling related to PA, some of which provided educational materials.	
Outcomes Addressed: PA level objectively measured: active kcals and minutes of activity per week, minutes/month, minutes/week, days of exercise per week, level of moderate and vigorous activity, total mean physical activity, and physical activity index scores. **Sedentary Behavior an Outcome:** No	
Examine cost, cost-effectivenesss or ROI: Not reported **Examine Cardiorespiratory Fitness as Outcome:** No	
Populations Analyzed: Adults 18–75; Black or African American; Hispanic or Latino	**Author-Stated Funding Source:** Agency for Healthcare Research and Quality

<table>
<tr><th colspan="2">Primary Care</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Morton K, Beauchamp M, Prothero A, et al. The effectiveness of motivational interviewing for health behaviour change in primary care settings: a systematic review. Health Psychol Rev. 2015;9(2):205–223. doi:10.1080/17437199.2014.882006.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="6">Abstract: Motivational interviewing (MI) is a patient-centred approach to behaviour change that was originally developed in the addiction field but has increasingly been applied to public health settings with a focus on health promotion. The purpose of this review was to examine the evidence base for MI interventions in primary care settings with non-clinical populations to achieve behaviour change for physical activity, dietary behaviours and/or alcohol intake. We also sought to explore the specific behaviour change techniques included in MI interventions within primary care. Electronic databases were searched for relevant articles and 33 papers met inclusion criteria and were included. Approximately 50% of the included studies (n = 18) demonstrated positive effects in relation to health behaviour change. The efficacy of MI approaches is unclear given the inconsistency of MI descriptions and intervention components. Furthermore, research designs that do not isolate the effects of MI make it difficult to determine the effectiveness of such approaches. We offer a number of recommendations for researchers and practitioners seeking to include MI within behaviour change interventions to help improve the quality of the research and the effectiveness of MI-based interventions within primary care settings.</td></tr>
<tr><td>Purpose: To review the evidence base for motivational interviewing interventions in primary care settings with general (non-clinical) populations to achieve actual behavior change for PA, dietary behaviors, and/or alcohol intake.</td></tr>
<tr><td>Timeframe: Not specified</td></tr>
<tr><td>Total # of Studies: 35 (22 PA outcome)</td></tr>
<tr><td>Description of Intervention(s):
Most commonly a combination of exercise prescription and motivational interviewing session, often with follow-up motivational interviewing phone calls with an exercise specialist. Sessions ranged from one session only to more than eight sessions, lasting between <13 minutes and >45 minutes.</td></tr>
<tr><td>Outcomes Addressed: PA: self-report (time spent in moderate-vigorous physical activity) or objectively (accelerometer counts).
Sedentary Behavior an Outcome:
No</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI:
Not reported
Examine Cardiorespiratory Fitness as Outcome: No</td></tr>
<tr><td>Populations Analyzed: Adults</td><td>Author-Stated Funding Source: Not reported</td></tr>
</table>

<table>
<tr><th colspan="2">Primary Care</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Neidrick TJ, Fick DM, Loeb SJ. Physical activity promotion in primary care targeting the older adult. J Am Acad Nurse Pract. 2012;24(7):405–416. doi:10.1111/j.1745-7599.2012.00703.x.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="6">Abstract: PURPOSE: This integrative review identifies and examines research literature focused on physical activity promotion provided in primary care settings to older adult patients in order to evaluate the effectiveness of provider-delivered interventions on elders short- and long-term activity levels. DATA RESOURCES: A comprehensive review of original research published in English from all countries through May 2010 was performed. Relevant literature was identified through MEDLINE, CINAHL, and ProQuest on-line databases. Data from 11 unique studies were systematically extracted and summarized in table format. CONCLUSIONS: Activity interventions delivered in primary care can produce at least short term increases in activity; however, there is limited evidence to evaluate whether long-term changes can be achieved and thus making the case for future longitudinal studies. IMPLICATIONS FOR PRACTICE: Tailored activity prescriptions should be provided after holistic patient assessment. Activity counseling requires recognition as a billable service and further study is needed to identify the most efficient intervention. Inclusion of health-economic evaluations in future research could reveal if efforts to improve physical activity levels are an efficient use of resources.</td></tr>
<tr><td>Purpose: To examine existing literature related to the effect of PA promotion provided in primary care on levels of PA in older adults.</td></tr>
<tr><td>Timeframe: Inception–May 2010</td></tr>
<tr><td>Total # of Studies: 11</td></tr>
<tr><td>Description of Intervention(s):
PA interventions of various session durations (3-15 minutes) focused primarily on PA promotion most commonly via verbal advice, although a few offered the PA intervention as part of a multi-component intervention. A majority used some form of printed material, including exercise prescription, schedule, guidelines, and contracts.</td></tr>
<tr><td>Outcomes Addressed: PA: changes in levels short- and/or long-term.
Sedentary Behavior an Outcome:
No</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI:
Not reported
Examine Cardiorespiratory Fitness as Outcome: No</td></tr>
<tr><td>Populations Analyzed: Adults ≥50</td><td>Author-Stated Funding Source: Not reported</td></tr>
</table>

<table>
<tr><th colspan="2">Primary Care</th></tr>
<tr><td colspan="2">Meta-Analysis
Citation: Orrow G, Kinmonth AL, Sanderson S, Sutton S. Republished research: effectiveness of physical activity promotion based in primary care: systematic review and meta-analysis of randomised controlled trials. Br J Sports Med. 2013;47(1):27. doi:10.1136/bjsports-2012-e1389rep.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="6">Abstract: Study question: Do trials of physical activity promotion based in primary care show sustained effects on physical activity or fitness in sedentary adults, and are exercise referral interventions more effective than other interventions? Summary answer: Trials of physical activity promotion based in primary care show positive effects on physical activity levels, but not on fitness, over at least 12 months; however, not enough evidence exists to indicate whether exercise referral is more effective than other primary care interventions.What is known and what this paper adds: Physical activity promotion in primary care, including exercise referral, is reported to improve physical activity levels in the short term but its longer term effect was unclear. Our review found that promotion of physical activity to sedentary adults identified through primary care significantly improves self reported physical activity levels over at least 12 months; we found few trials of exercise referral interventions with 12 months' follow-up and more trials are needed to determine their relative effectiveness.</td></tr>
<tr><td>Purpose: To determine whether trials of PA promotion based in primary care show sustained effects on physical activity or fitness in sedentary adults, and whether exercise referral interventions are more effective than other interventions.</td></tr>
<tr><td>Timeframe: Inception–May 2010</td></tr>
<tr><td>Total # of Studies: 16 (14 in meta-analysis)</td></tr>
<tr><td>Description of Intervention(s):
PA promotion delivered primarily in a primary care setting with most including written materials and two or more sessions of counselling delivered face-to-face with a combination of two professionals from different disciplines. Promotion interventions also used group exercise referral and self monitoring tools.</td></tr>
<tr><td>Outcomes Addressed: Self-reported PA at 12 months: dichotomous (whether or not subjects achieved 30 minutes of moderate intensity exercise 5 days per week) and continuous (minutes/week, kcal/kg per week, metabolic equivalent h/week).
Sedentary Behavior an Outcome:
No</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI: Not reported
Examine Cardiorespiratory Fitness as Outcome:
Yes</td></tr>
<tr><td>Populations Analyzed: Adults ≥16</td><td>Author-Stated Funding Source: National Institute for Health Research, the University of Cambridge, NIHR Programme Grant for Applied Research, NIHR School for Primary Care Research.</td></tr>
</table>

<table>
<tr><th colspan="2">Primary Care</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Ramoa Castro A, Oliveira NL, Ribeiro F, Oliveira J. Impact of educational interventions on primary prevention of cardiovascular disease: a systematic review with a focus on physical activity. Eur J Gen Pract. 2017;23(1):59-68. doi:10.1080/13814788.2017.1284791.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="6">Abstract: BACKGROUND: Evidence from epidemiological and experimental studies illustrates the beneficial impact of healthy lifestyle behaviours on cardiovascular risk. OBJECTIVES: To assess the effectiveness of primary care health education interventions designed to promote healthy lifestyles on physical activity levels and cardiovascular risk. METHODS: A computer-aided search on PubMed and Scopus was performed to identify relevant studies published from January 2000 to October 2016. Two authors independently selected studies for inclusion and extracted data, including intervention characteristics and outcome measures, namely physical activity and cardiovascular risk or risk factors. RESULTS: Of the 212 identified studies, 15 met the inclusion criteria. The 15 studies enrolled 6727 participants; the sample size varied between 74 and 878 adults. Fourteen studies assessed physical activity by questionnaire and only one study used accelerometry. Eight of the 15 studies showed improvements in the physical activity levels after the intervention, ranging from 5% to 26% in those where significant changes between groups were detected. Most studies reported significant positive effects of the health education interventions on cardiovascular risk factors, mainly on lipid profile, blood pressure and cardiovascular risk score. CONCLUSION: The health education interventions, in primary care, seem to improve daily physical activity, cardiovascular risk factors and risk score.</td></tr>
<tr><td>Purpose: To analyze the effectiveness of health education interventions for change of lifestyle, with particular emphasis on PA and cardiovascular risk, in primary care.</td></tr>
<tr><td>Timeframe: January 2000–October 2016</td></tr>
<tr><td>Total # of Studies: 15</td></tr>
<tr><td>Description of Intervention(s): Health education interventions utilized counselling mostly delivered face-to-face or via telephone. Frequency of sessions and length of intervention varied with length ranging from six hours to 12 months. Counselling focus and information provided varied widely.</td></tr>
<tr><td>Outcomes Addressed: PA: self-reported questionnaires.
Sedentary Behavior an Outcome: No</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI: Not reported
Examine Cardiorespiratory Fitness as Outcome: No</td></tr>
<tr><td>Populations Analyzed: Adults</td><td>Author-Stated Funding Source: European Regional Development Fund, Portuguese Foundation for Science and Technology (FCT).</td></tr>
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<table>
<tr><th colspan="2">Primary Care</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Sanchez A, Bully P, Martinez C, Grandes G. Effectiveness of physical activity promotion interventions in primary care: A review of reviews. Prev Med. 2015;76(suppl):S56–S67.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="5">Abstract: OBJECTIVE: The present review aims to summarize the evidence about the effectiveness of physical activity (PA) promotion interventions in primary care (PC) and the intervention or sample characteristics associated with greater effectiveness. METHODS: MEDLINE, EMBASE, and Cochrane Library were searched to identify systematic reviews and meta-analyses published from 2002 to 2012 that assessed the effectiveness of PA-promoting interventions in PC. Information was extracted and recorded about each of the selected studies and their reported results. Methodological and evidence quality was independently rated by two reviewers using the nine-item OQAQ scale and the SIGN classification system. RESULTS: Ten of the 1664 articles identified met the inclusion criteria: five meta-analyses, three systematic reviews, and two literature reviews. Overall, PA promotion interventions in PC showed a small to moderate positive effect on increasing PA levels. Better results were obtained by interventions including multiple behavioral change techniques and those targeted to insufficiently active patients. No clear associations were found regarding intervention intensity or sample characteristics. CONCLUSION: Although several high-quality reviews provided clear evidence of small but positive effects of PA intervention in PC settings, evidence of specific strategies and sample characteristics associated with greater effectiveness is still needed to enhance the implementation of interventions under routine clinical conditions.</td></tr>
<tr><td>Purpose: To summarize the evidence of the effectiveness of PA promotion interventions in the primary care setting designed to increase PA levels of adult patients.</td></tr>
<tr><td>Timeframe: 2002–2012</td></tr>
<tr><td>Total # of Studies: 10</td></tr>
<tr><td>Description of Intervention(s):
Any intervention performed or initiated in a primary care setting with the goal of increasing PA level or participation of sedentary or insufficiently active adults.</td></tr>
<tr><td>Outcomes Addressed: Increase in PA level or proportion of patients meeting predefined PA level.
Sedentary Behavior an Outcome: No</td><td></td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI: Not reported
Examine Cardiorespiratory Fitness as Outcome: No</td><td></td></tr>
<tr><td>Populations Analyzed: Adults ≥18</td><td>Author-Stated Funding Source: A Network for Prevention and Health Promotion in Primary Care, Instituto de Salud Carlos III of the Ministry of Economy and Competitiveness, European Union ERDF funds, Health Department of the Basque Government</td></tr>
</table>

<table>
<tr><th colspan="2">Schools</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Demetriou Y, Honer O. Physical activity interventions in the school setting: a systematic review. Psychol Sport Exerc. 2012;13(2):186–196. doi:10.1016/j.psychsport.2011.11.006.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="8">Abstract: Objectives. To review the effectiveness of school-based interventions with a physical activity component by measuring changes in psychological determinants, physical activity, and health outcomes.
Design. Systematic Review.
Method. We conducted a literature search of school-based controlled studies that involved a physical activity intervention targeting school students. Study design, methodological quality, and effectiveness of interventions on three target levels, ‘health and fitness’ (BMI and motor performance), ‘physical activity’, and ‘psychological determinants’ (knowledge of physical activity effects, self-concept, and attitudes towards physical activity), were analysed. Furthermore, we examined the influence of specific factors (e.g., age and gender) and mediator effects.
Results. The literature search identified 129 studies. The majority of the studies examining motor performance, physical activity, and knowledge of physical activity achieved significant results (69.7%, 56.8% and 87.5%, respectively). Significant effects on self-concept and attitudes were also found but to a smaller extent (in 30% and 43.8% of the studies, respectively). Only a few studies examining BMI (2.7%), physical activity (6.8%), and attitudes towards physical activity (12.5%) revealed negative effects, with better results observed for the control group. Intervention effects were influenced by the students’ age, intervention type, and frequency of the interventions. Self-efficacy was found to mediate the relationship between the program and the students’ physical activity.
Conclusions. Numerous school-based physical activity interventions achieved positive effects on three target levels. Further research is needed to clarify the mediator effects of psychological variables on physical activity and health and to increase our knowledge about the mechanisms that underlie behavioural change.</td></tr>
<tr><td>Purpose: To review the effectiveness of school-based interventions with a PA component by measuring changes in psychological determinants, PA, and health outcomes among children and adolescents.</td></tr>
<tr><td>Timeframe: July 2008–December 2010</td></tr>
<tr><td>Total # of Studies: 129</td></tr>
<tr><td>Description of Intervention(s):
PA component implemented during physical education (PE) lessons or regular school hours, included providing modified PE lessons or additional PE, enriching the material in PE, or creating environments conducive to PA in the school setting.</td></tr>
<tr><td>Outcomes Addressed: PA: total amount of moderate to vigorous PA (school-related PA, leisure sports, and active transportation).
Sedentary Behavior an Outcome: No</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI: Not reported
Examine Cardiorespiratory Fitness as Outcome: No</td></tr>
<tr><td>Populations Analyzed: Children and adolescents</td><td>Author-Stated Funding Source: Not reported</td></tr>
</table>

<table>
<tr><th colspan="2">Schools</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Escalante Y, Garcia-Hermoso A, Backx K, Saavedra JM. Playground designs to increase physical activity levels during school recess: a systematic review. Health Educ. Behav. 2014;41(2):138–144. doi:10.1177/1090198113490725.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="6">Abstract: School recess provides a major opportunity to increase children's physical activity levels. Various studies have described strategies to increase levels of physical activity. The purpose of this systematic review is therefore to examine the interventions proposed as forms of increasing children's physical activity levels during recess. A systematic search of seven databases was made from the July 1 to July 5, 2012, leading to a final set of eight studies (a total of 2,383 subjects-599 "preschoolers" and 1,784 "schoolchildren") meeting the inclusion criteria. These studies were classified according to the intervention used: playground markings, game equipment, playground markings plus physical structures, and playground markings plus game equipment. The results of these studies indicate that the strategies analyzed do have the potential to increase physical activity levels during recess. The cumulative evidence was (a) that interventions based on playground markings, game equipment, or a combination of the two, do not seem to increase the physical activity of preschoolers and schoolchildren during recess and (ii) that interventions based on playground markings plus physical structures do increase the physical activity of schoolchildren during recess in the short to medium term.</td></tr>
<tr><td>Purpose: To examine and compare the interventions proposed as forms of increasing children’s PA during recess.</td></tr>
<tr><td>Timeframe: 1900–May 2012</td></tr>
<tr><td>Total # of Studies: 8</td></tr>
<tr><td>Description of Intervention(s):
Interventions included the following playground redesign characteristics: playground markings, game equipment, playground markings plus physical structures, or playground markings plus game equipment. Recess duration varied from 16 minutes to 42 minutes for studies reported. The interventions last 4 weeks to 1 year.</td></tr>
<tr><td>Outcomes Addressed: Vigorous PA and/or moderate to-vigorous PA: objectively through heart rate monitoring, pedometer, and/or accelerometer.
Sedentary Behavior an Outcome:
No</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI: No studies analyzed cost effectiveness
Examine Cardiorespiratory Fitness as Outcome: No</td></tr>
<tr><td>Populations Analyzed: Children 2–12</td><td>Author-Stated Funding Source: European Social Fun, the Autonomous Government of Extremadura</td></tr>
</table>

<table>
<tr><th colspan="2">Schools</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Ickes MJ, Erwin H, Beighle A. Systematic review of recess interventions to increase physical activity. J Phys Act Healt. 2013;10(6):910–926.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="6">Abstract: BACKGROUND:
With the rapid increase in obesity rates among youth, efforts to increase physical activity (PA) have become a priority. School-based strategies for PA promotion must be cost-effective, unobtrusive, and linked to improved academic performance. Efforts to maximize recess PA are advocated because of both health and academic benefits. The purpose of this manuscript was to review recess interventions aimed to improve PA among youth, and make recommendations to develop related best practices.
METHODS:
An extensive literature search was conducted to include all primary research articles evaluating any recess intervention with PA as an outcome.
RESULTS:
The included 13 interventions represented both settings within the U.S and internationally, among preschools and elementary/primary schools. A variety of strategies were used within the design and implementation of each of the interventions including: added equipment/materials, markings, zones, teacher involvement, active video games, activity of the week, and activity cards. Of the included studies, 95% demonstrated positive outcomes as a result of the recess intervention.
CONCLUSIONS:
A number of simple, low-cost strategies can be implemented to maximize the amount of recess time students are allotted. Long-term follow-up studies are warranted for each of the recess strategies identified to be effective.</td></tr>
<tr><td>Purpose: To review recess interventions aimed to improve PA among youth.</td></tr>
<tr><td>Timeframe: 1986–May 2011</td></tr>
<tr><td>Total # of Studies: 13</td></tr>
<tr><td>Description of Intervention(s):
Most interventions added equipment or materials to their regular playground offerings, playground markings were used, teacher involvement. All interventions were school-based, conducted within the school day. Duration of the interventions ranged from 1 week to 12 months.</td></tr>
<tr><td>Outcomes Addressed: Physical activity: measured by various means, accelerometers, pedometers, heart rate telemetry, Observational System for Recording Physical Activity in Preschoolers, semistructured interviews, and changes in energy expenditure.
Sedentary Behavior an Outcome: Yes</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI: Not reported
Examine Cardiorespiratory Fitness as Outcome: No</td></tr>
<tr><td>Populations Analyzed: Children 3–12</td><td>Author-Stated Funding Source: Not reported</td></tr>
</table>

<table>
<tr><th colspan="2">Schools</th></tr>
<tr><td colspan="2">Meta-Analysis
Citation: Lonsdale C, Rosenkranz RR, Peralta LR, Bennie A, Fahey P, Lubans DR. A systematic review and meta-analysis of interventions designed to increase moderate-to-vigorous physical activity in school physical education lessons. Prev Med. 2013;56(2):152-161. doi:10.1016/j.ypmed.2012.12.004.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="6">Abstract: OBJECTIVES:
Physical education (PE) that allows students to engage in moderate-to-vigorous physical activity (MVPA) can play an important role in health promotion. Unfortunately, MVPA levels in PE lessons are often very low. In this review, we aimed to determine the effectiveness of interventions designed to increase the proportion of PE lesson time that students spend in MVPA.
METHODS:
In March 2012, we searched electronic databases for intervention studies that were conducted in primary or secondary schools and measured the proportion of lesson time students spent in MVPA. We assessed risk of bias, extracted data, and conducted meta-analyses to determine intervention effectiveness.
RESULTS:
From an initial pool of 12,124 non-duplicate records, 14 studies met the inclusion criteria. Students in intervention conditions spent 24% more lesson time in MVPA compared with students in usual practice conditions (standardized mean difference=0.62).
CONCLUSIONS:
Given the small number of studies, moderate-to-high risk of bias, and the heterogeneity of results, caution is warranted regarding the strength of available evidence. However, this review indicates that interventions can increase the proportion of time students spend in MVPA during PE lessons. As most children and adolescents participate in PE, these interventions could lead to substantial public health benefits.</td></tr>
<tr><td>Purpose: To systematically review the evidence related to interventions designed to increase active learning time during school physical education lessons.</td></tr>
<tr><td>Timeframe: Inception–March 2012</td></tr>
<tr><td>Total # of Studies: 14 (13 meta-analysis)</td></tr>
<tr><td>Description of Intervention(s):
Two types of interventions: (a) teaching strategies with a moderate-to-vigorous PA focus through effective activity, class organization and management, and instruction; and (b) fitness infusion, in which teachers supplemented students' participation in sports activities with vigorous PA.</td></tr>
<tr><td>Outcomes Addressed: Time spent in moderate-to-vigorous PA: accelerometers, heart rate monitors, direct observation methods.
Sedentary Behavior an Outcome: No</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI: Not reported
Examine Cardiorespiratory Fitness as Outcome: No</td></tr>
<tr><td>Populations Analyzed: Children and adolescents</td><td>Author-Stated Funding Source: The University of Western Sydney Research Grants Scheme.</td></tr>
</table>

<table>
<tr><th colspan="2">Schools</th></tr>
<tr><td colspan="2">Meta-Analysis
Citation: Mears R, Jago R. Effectiveness of after-school interventions at increasing moderate-to-vigorous physical activity levels in 5- to 18-year olds: a systematic review and meta-analysis. Br J Sports Med. May 2016;pii:bjsports-2015-094976. doi:10.1136/bjsports-2015-094976.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="6">Abstract: AIM: Physical activity in children improves cardiovascular, mental, metabolic and skeletal health. Many children fail to meet the national recommendation of at least 60 min per day of moderate-to-vigorous physical activity (MVPA). After-school programmes provide an opportunity to engage children in physical activity. This systematic review and meta-analysis examine the effectiveness of after-school interventions at increasing MVPA levels in children and adolescents. DESIGN: Systematic review and meta-analyses. DATA SOURCES: A literature search was conducted using MEDLINE, EMBASE and PsychINFO databases from January 1950 to April 2015. ELIGIBILITY CRITERIA FOR SELECTING STUDIES: Inclusion criteria-Population: participants aged 5-18 years. INTERVENTION: an after-school programme in a school-based setting as the main component of an intervention to increase physical activity levels. OUTCOMES: individual-level measure of time spent in MVPA. STUDY DESIGN: quasi-experimental, pilot, non-randomised or randomised trials. EXCLUSION CRITERIA: conference abstracts, unpublished articles, dissertations and non-English language papers. RESULTS: 1387 records were identified through database searching. After removal of duplicates, there were 748 records. 15 articles met the inclusion criteria for the systematic review. 6 studies were eligible for meta-analysis and the pooled intervention effect at end point follow-up was 4.84 min/day of MVPA (95% CI -0.94 to 10.61). The effectiveness of after-school interventions varied considerably and comparisons between studies limited by different methodological study designs. Subgroup analyses within a small minority of studies revealed significant benefits in overweight/obese children and boys. There was a lack of convincing evidence that interventions based on theories of behaviour change were more effective than those with no underlying theory. CONCLUSIONS: After-school physical activity interventions to date have had mixed effectiveness on increasing MVPA levels. More robust evaluations of extracurricular physical activity interventions are required, particularly studies that use objective assessment of physical activity.</td></tr>
<tr><td>Purpose: To examine the effectiveness of after-school interventions at increasing moderate-to-vigorous PA (MVPA) levels in children and adolescents using a meta-analysis approach where possible.</td></tr>
<tr><td>Timeframe: 1950–April 2015</td></tr>
<tr><td>Total # of Studies: 15</td></tr>
<tr><td>Description of Intervention(s):
An after-school programme in a school-based setting as the main component of an intervention to increase PA levels. The nature of the after-school PA component of the intervention included structured or unstructured play, planned MVPA, multisport PAs, single sport PA programme (eg., soccer or dance offered alone) or adhering to specific principles such as the SPARK or CATCH Kids Club curriculum or the YMCA environmental change principles.</td></tr>
<tr><td>Outcomes Addressed: Individual-level measure of time spent in MVPA: measured by accelerometers in 12 studies, heart rate (HR) monitor in one study and self-report in two studies. There was little consistency in the unit of measurement utilized for MVPA with studies reporting hours or minutes per weekday or day, minutes per after-school time period, minutes per hour, minutes per intervention session, minutes per week, and percentage lesson time in MVPA.
Sedentary Behavior an Outcome:
No</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI:
Not reported
Examine Cardiorespiratory Fitness as Outcome: No</td></tr>
</table>

Populations Analyzed: Children 5–15	**Author-Stated Funding Source:** National Institute for Health Research

<table>
<tr><th colspan="2">Schools</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Parrish AM, Okely AD, Stanley RM, Ridgers ND. The effect of school recess interventions on physical activity: a systematic review. Sports Medicine. 2013;43(4):287–299.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="6">Abstract: BACKGROUND: The benefits of physical activity to maintain optimal health and well-being in children and adolescents are undisputed. The school environment offers opportunities for children to be physically active.
OBJECTIVE: The aim of this review is to systematically examine the effects of recess-based interventions on the physical activity (PA) levels of school-aged children and adolescents.
DATA SOURCES: A systematic literature search was conducted to identify papers reporting interventions to promote PA during school recess and/or lunchtime periods. The search was conducted in six databases (PubMed, SPORTDiscus™, Web of Science, Proquest, Cochrane and Scopus) for papers published between January 2000 and April 2011.
STUDY SELECTION: Articles were included in the review if (i) they reported the findings of an intervention targeting PA levels of children and/or adolescents during school recess and/or lunchtime; (ii) have a measure of PA as an outcome variable; (iii) participants were aged between 5 and 18 years; and (iv) were published in English.
METHODS: Two authors independently searched the literature using the same search strategies to identify papers reporting interventions that promote PA during school recess and lunchtime periods. Methodological quality was assessed using an adapted eight item assessment scale. The effects of the interventions were assessed with a rating system used in a recent review of interventions in youth.
RESULTS: The search originally retrieved 2,265 articles. Nine published peer-reviewed journal articles met the inclusion criteria for this review. Eight studies used randomized controlled trials and one was a controlled trial. Three studies demonstrated high methodological quality (33%). None of the studies adequately reported the randomization procedure or used power calculations. Few studies reported potential confounders and three studies had less than a 6 week follow-up. Five studies demonstrated a positive intervention effect on children's PA levels, with four reporting statistically significant increases and two reporting significant decreases in recess PA. The summary of the levels of evidence for intervention effects found inconclusive results for all intervention types, though promising strategies that require further investigation were identified.
LIMITATIONS: Whilst every effort was made to ensure that this review was as encompassing as possible, it may be limited by its search terms especially if there were studies with unclear titles or</td></tr>
<tr><td>Purpose: To systematically examine the effects of recess interventions on PA levels among school-aged children and adolescents.</td></tr>
<tr><td>Timeframe: January 2000–April 2011</td></tr>
<tr><td>Total # of Studies: 9</td></tr>
<tr><td>Description of Intervention(s):
Interventions to promote PA during school recess and/or lunchtime periods.</td></tr>
<tr><td>Outcomes Addressed:
Children's PA level: measured during school recess and lunchtime.
Sedentary Behavior an Outcome:
No</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI: Not reported
Examine Cardiorespiratory Fitness as Outcome: No</td></tr>
</table>

	abstracts. In addition, only manuscripts published in English were considered, eliminating any possible studies published in other languages. CONCLUSIONS: All of the studies used an objective measure to assess PA outcomes, although several criteria were consistently absent from the studies. The levels of evidence were not sufficient to establish conclusive intervention effects on children's recess PA. This could be due to the small number of published studies. There is a need for higher-quality intervention research to strengthen published findings to inform recess PA interventions. Intervention research is needed in adolescents due to the absence of school recess intervention research in this population.
Populations Analyzed: Children 5–18	**Author-Stated Funding Source:** National Heart Foundation of Australia Career Development Fellowship, Australian Research Council Discovery Early Career Researcher Award

<table>
<tr><th colspan="2">Schools</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Saraf DS, Nongkynrih B, Pandav CS, et al. A systematic review of school-based interventions to prevent risk factors associated with noncommunicable diseases. Asia Pac J Public Health. 2012;24(5):733–752. doi:10.1177/1010539512445053.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="6">Abstract: Noncommunicable diseases (NCDs) are emerging as an important public health problem in developing countries. The risk factors for NCDs are initiated during childhood and adolescence. The aim of this review was to assess the effectiveness of school-based interventions for prevention of NCD risk factors (physical inactivity, diet, and tobacco consumption), and identify processes that affect the main outcome. The retrieved studies from 2001 to 2010 were analyzed for their methodological quality (using standard guidelines), settings, intervention components, and main outcomes. The literature search identified 37 studies. The proportion of studies showing a positive result was 83% (10/12) among those that involved family, 87%(7/8) that involved both community and family, and 76% (13/17) that involved school only. Overall, 80% of the studies reported at least some evidence of a positive intervention effect. The current literature search supports the effectiveness of school-based interventions for prevention of risk factors associated with NCDs.</td></tr>
<tr><td>Purpose: To assess the effectiveness of school-based interventions in bringing about a change in knowledge, attitude, and practices of schoolchildren at school, family, and community levels for the prevention of non-communicable disease risk factors (physical inactivity, diet, and tobacco consumption) and to identify processes that affect the main outcome.</td></tr>
<tr><td>Timeframe: 2001–2010</td></tr>
<tr><td>Total # of Studies: 37, 8 PA intervention, 9 PA + nutrition intervention.</td></tr>
<tr><td>Description of Intervention(s):
PA, diet, or a combination of these two, interventions, conducted in school environment with or without involvement of family or community. Focused on educational interventions, providing life skills or policy changes. The duration of intervention ranged from 3 months to 2 years with a mode of 1 year.</td></tr>
<tr><td>Outcomes Addressed: Change in PA and sedentary activity: self-reported questionnaire or objective measures (total activity counts).
Sedentary Behavior an Outcome:
Yes</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI: Not reported
Examine Cardiorespiratory Fitness as Outcome:
No</td></tr>
<tr><td>Populations Analyzed: Children and adolescents</td><td>Author-Stated Funding Source: No funding source used</td></tr>
</table>

<table>
<tr><th colspan="2">Worksite</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Malik SH, Blake H, Suggs LS. A systematic review of workplace health promotion interventions for increasing physical activity. Br J Health Psychol. 2014.19(1):149–180. doi:10.1111/bjhp.12052.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="6">Abstract: PURPOSE: The benefits of an active lifestyle are widely documented, yet studies show that only a small proportion of adults engage in sufficient levels of physical activity. The workplace presents an ideal avenue for delivering initiatives to promote physical activity, overcoming commonly cited barriers such as a 'lack of time' and providing access to a large intersection of society. The purpose of this study was to (1) explore the types of interventions workplaces implement to promote physical activity among staff, (2) describe the characteristics of those interventions, (3) understand whether these interventions positively impact on activity levels, and (4) assess the methodological quality of studies. METHODS: A systematic review of workplace physical activity interventions published up to April 2011 was conducted to identify types of interventions and their outcomes. RESULTS: Of the 58 studies included, the majority utilized health promotion initiatives. There were six physical activity/exercise interventions, 13 counselling/support interventions, and 39 health promotion messages/information interventions. Thirty-two of these studies showed a statistically significant increase in a measure of physical activity against a control group at follow-up. CONCLUSIONS: While the studies included in this review show some evidence that workplace physical activity interventions can be efficacious, overall the results are inconclusive. Despite the proliferation of research in this area, there is still a need for more well-designed studies to fully determine the effectiveness of workplace interventions for increasing physical activity and to identify the types of interventions that show the most promise.</td></tr>
<tr><td>Purpose: To: (1) explore the types of interventions workplaces implement to promote PA among staff; (2) describe the characteristics of those interventions (e.g., sample size/ demographics, type of intervention, physical activity measures, theoretical underpinnings); (3) understand whether these interventions positively impact physical activity levels; and (4) assess the methodological quality of studies.</td></tr>
<tr><td>Timeframe: 1950–April 2011</td></tr>
<tr><td>Total # of Studies: 58</td></tr>
<tr><td>Description of Intervention(s):
Included: (1) physical activity/exercise interventions (including interventions such as active travel, stair walking interventions, and exercise classes); (2) counselling/support interventions (including telephone counselling/coaching, motivational interviewing, peer support, and group-based counselling/coaching interventions); or (3) health promotion messages/information interventions (including interventions such as health checks/screening, the delivery of health promotion messages/information via email, posters, flyers, information classes, internet, etc. and multi-component health promotion programs).</td></tr>
<tr><td>Outcomes Addressed: Levels of PA: self-report measures or objective measures (accelerometer or pedometer).
Costs Associated with the Intervention: Not reported
Examine Cardiorespiratory Fitness as Outcome: No</td></tr>
<tr><td>Populations Analyzed: Adults</td><td>Author-Stated Funding Source: Not reported</td></tr>
</table>

<table>
<tr><th colspan="2">Worksite</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Osilla KC, Van Busum K, Schnyer C, Larkin JW, Eibner C, Mattke S. Systematic review of the impact of worksite wellness programs. Am J Manag Care. 2012;18(2):e68–e81.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="5">Abstract: OBJECTIVES: To analyze the impact of worksite wellness programs on health and financial outcomes, and the effect of incentives on participation. METHODS: Sources were PubMed, CINAHL and EconLit, Embase, Web of Science, and Cochrane for 2000-2011. We examined articles with comparison groups that assessed health-related behaviors, physiologic markers, healthcare cost, and absenteeism. Data on intervention, outcome, size, industry, research design, and incentive use were extracted. RESULTS: A total of 33 studies evaluated 63 outcomes. Positive effects were found for threefourths of observational designs compared with half of outcomes in randomized controlled trials. A total of 8 of 13 studies found improvements in physical activity, 6 of 12 in diet, 6 of 12 in body mass index/weight, and 3 of 4 in mental health. A total of 6 of 7 studies on tobacco and 2 of 3 on alcohol use found significant reductions. All 4 studies on absenteeism and 7 of 8 on healthcare costs estimated significant decreases. Only 2 of 23 studies evaluated the impact of incentives and found positive health outcomes and decreased costs. CONCLUSIONS: The studies yielded mixed results regarding impact of wellness programs on healthrelated behaviors, substance use, physiologic markers, and cost, while the evidence for effects on absenteeism and mental health is insufficient. The validity of those findings is reduced by the lack of rigorous evaluation designs. Further, the body of publications is in stark contrast to the widespread use of such programs, and research on the effect of incentives is lacking.</td></tr>
<tr><td>Purpose: To analyze the impact of worksite wellness programs on health and financial outcomes, and the effect of incentives on participation.</td></tr>
<tr><td>Timeframe: 2000–June 2011</td></tr>
<tr><td>Total # of Studies: 33</td></tr>
<tr><td>Description of Intervention(s): Included interventions that had a control or other comparison group and evaluated outcomes of comprehensive worksite wellness programs (i.e., multiple wellness components focused on health promotion or disease prevention).</td></tr>
<tr><td>Outcomes Addressed: Exercise, aerobic fitness, reduction in physical inactivity, readiness to change exercise behavior, energy expenditure, weekend activity, total minutes walked per week.
Costs Associated with the Intervention: Not reported
Examine Cardiorespiratory Fitness as Outcome: No</td><td></td></tr>
<tr><td>Populations Analyzed: Adults</td><td>Author-Stated Funding Source: Employee Benefits Security Administration, Department of Labor, the Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services</td></tr>
</table>

<table>
<tr><th colspan="2">Worksite</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Plotnikoff R, Collins CE, Williams R, Germov J, Callister R. Effectiveness of interventions targeting health behaviors in university and college staff: a systematic review. Am J Health Promot. 2015;29(5):e169–e187. doi:10.4278/ajhp.130619-LIT-313.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="6">Abstract: OBJECTIVE: Evaluate the literature on interventions targeting tertiary education staff within colleges and universities for improvements in health behaviors such as physical activity, dietary intake, and weight loss. DATA SOURCE: One online database, Medline, was searched for literature published between January 1970 and February 2013. STUDY INCLUSION AND EXCLUSION CRITERIA: All quantitative study designs, including but not limited to randomized controlled trials, quasi-experimental studies, nonrandomized experimental trials, cohort studies, and case-control studies, were eligible. DATA EXTRACTION: Data extraction was performed by one reviewer using a standardized form developed by the researchers. Extraction was checked for accuracy and consistency by a second reviewer. DATA SYNTHESIS: Data in relation to the above objective were extracted and described in a narrative synthesis. RESULTS: Seventeen studies were identified that focused on staff within the tertiary education setting. The review yielded overall positive results with 13 reporting significant health-related improvements. Weight loss, physical activity and fitness, and/or nutrition were the focus in more than half (n = 9) of the studies. CONCLUSION: This appears to be the first review to examine health interventions for tertiary education staff. There is scope to enhance cross-disciplinary collaboration in the development and implementation of a "Healthy University" settings-based approach to health promotion in tertiary education workplaces. Universities or colleges could serve as a research platform to evaluate such intervention strategies.</td></tr>
<tr><td>Purpose: To identify the effectiveness of health-related interventions across all domains of health behavior that have been targeted by such interventions among adults.</td></tr>
<tr><td>Timeframe: January 1970–February 2013</td></tr>
<tr><td>Total # of Studies: 17</td></tr>
<tr><td>Description of Intervention(s): Interventions implemented in a tertiary education setting with an aim to improve one or more health behaviors of staff.</td></tr>
<tr><td>Outcomes Addressed: PA related outcomes: infrastructure usage (e.g., stairs), steps per day, time spent undertaking PA, VO2 max, muscle strength, sitting time, and leisure time.
Sedentary Behavior an Outcome: Yes</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI: Not reported
Examine Cardiorespiratory Fitness as Outcome: Yes</td></tr>
<tr><td>Populations Analyzed: Adults</td><td>Author-Stated Funding Source: Not reported</td></tr>
</table>

<table>
<tr><th colspan="2">Worksite</th></tr>
<tr><td colspan="2">Systematic Review
Citation: To QG, Chen TT, Magnussen CG, To KG. Workplace physical activity interventions: a systematic review. Am J Health Promot. 2013;27(6):e113–e123.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="5">Abstract: OBJECTIVE: To assess the effectiveness of workplace interventions in improving physical activity. DATA SOURCE: EBSCO research database (and all subdatabases). STUDY INCLUSION AND EXCLUSION CRITERIA: Articles were published from 2000 to 2010 in English, had appropriate designs, and measured employees' physical activity, energy consumption, and/or body mass index (BMI) as primary outcomes. Articles that did not meet the inclusion criteria were excluded. DATA EXTRACTION: Data extracted included study design, study population, duration, intervention activities, outcomes, and results.
DATA SYNTHESIS: Data were synthesized into one table. Results of each relevant outcome including p values were combined. RESULTS: Twelve (60%) of 20 selected interventions reported an improvement in physical activity level, steps, or BMI, and there was one slowed step reduction in the intervention group. Among these, 10 were less than 6 months in duration; 9 used pedometers; 6 applied Internet-based approaches; and 5 included activities targeting social and environmental levels. Seven of 8 interventions with pre-posttest and quasi-experimental controlled design showed improvement on at least one outcome. However, 7 of 12 randomized controlled trials (RCTs) did not prove effective in any outcome. CONCLUSION: Interventions that had less rigorous research designs, used pedometers, applied Internet-based approaches, and included activities at social and environmental levels were more likely to report being effective than those without these characteristics.</td></tr>
<tr><td>Purpose: To determine whether or not workplace interventions are effective in promoting and increasing PA.</td></tr>
<tr><td>Timeframe: 2000–2010</td></tr>
<tr><td>Total # of Studies: 20</td></tr>
<tr><td>Description of Intervention(s): Workplace PA interventions, the majority of which targeted the interpersonal or intrapersonal level; however, some targeted the social and environmental levels.</td></tr>
<tr><td>Outcomes Addressed: Number of steps, PA, walking, sedentary behavior, time sitting, vigorous PA, use of pedometers.
Costs Associated with the Intervention: Not reported
Examine Cardiorespiratory Fitness as Outcome: No</td><td></td></tr>
<tr><td>Populations Analyzed: Adults</td><td>Author-Stated Funding Source: No funding source used</td></tr>
</table>

<table>
<tr><th colspan="2">Worksite</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Torquati L, Pavey T, Kolbe-Alexander T, Leveritt M. Promoting diet and physical activity in nurses. Am J Health Promot. 2017;31(1):19–27. doi:10.4278/ajhp.141107-LIT-562.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="6">Abstract: Objective. To systematically review the effectiveness of intervention studies promoting diet and physical activity (PA) in nurses. Data Source . English language manuscripts published between 1970 and 2014 in PubMed, Scopus, CINAHL, and EMBASE, as well as those accessed with the PICO tool, were reviewed. Study Inclusion and Exclusion Criteria . Inclusion criteria comprised (1) nurses/student nurses working in a health care setting and (2) interventions where PA and/or diet behaviors were the primary outcome. Exclusion criteria were (1) non-peer-reviewed articles or conference abstracts and (2) interventions focused on treatment of chronic conditions or lifestyle factors other than PA or diet in nurses. Data Extraction . Seventy-one full texts were retrieved and assessed for inclusion by two reviewers. Data were extracted by one reviewer and checked for accuracy by a second reviewer. Data Synthesis . Extracted data were synthesized in a tabular format and narrative summary. Results . Nine (n = 737 nurses) studies met the inclusion criteria. Quality of the studies was low to moderate. Four studies reported an increase in self-reported PA through structured exercise and goal setting. Dietary outcomes were generally positive, but were only measured in three studies with some limitations in the assessment methods. Two studies reported improved body composition without significant changes in diet or PA. Conclusions . Outcomes of interventions to change nurses' PA and diet behavior are promising, but inconsistent. Additional and higher quality interventions that include objective and validated outcome measures and appropriate process evaluation are required.</td></tr>
<tr><td>Purpose: To assess the effectiveness of any workplace intervention studies specifically promoting diet and/or PA behavior in nurses.</td></tr>
<tr><td>Timeframe: Inception–October 2014</td></tr>
<tr><td>Total # of Studies: 9</td></tr>
<tr><td>Description of Intervention(s):
PA and/or nutrition interventions with nurses or nursing students currently working in a health care setting. Individual-based exercise and self-monitoring of PA; education material and individual planning to improve PA and diet; lectures and workshops about PA and/or diet; on-site exercise sessions, toolkit, and manipulation of workplace with social reinforcement; and a nurse champion to deliver information, on-going motivation, and on-site exercise classes.</td></tr>
<tr><td>Outcomes Addressed: Change in either diet and/or PA behavior: total energy expenditure, PA levels, steps, and sitting time.
Sedentary Behavior an Outcome: Yes</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI: Not reported
Examine Cardiorespiratory Fitness as Outcome: No</td></tr>
<tr><td>Populations Analyzed: Adults 19–67; Nurses</td><td>Author-Stated Funding Source: No funding source used</td></tr>
</table>

<table>
<tr><th colspan="2">Worksite</th></tr>
<tr><td colspan="2">Systematic Review
Citation: Wong JY, Gilson ND, van Uffelen JG, Brown WJ. The effects of workplace physical activity interventions in men: a systematic review. Am J Mens Health. 2012;6(4):303–313. doi:10.1177/1557988312436575.</td></tr>
<tr><td>Level of Impact: Community</td><td rowspan="5">Abstract: The workplace is cited as a promising setting for physical activity (PA) promotion, but workplace PA interventions tend not to specifically target men. The aim of this article was to review the literature on workplace PA interventions for men and to identify key issues for future intervention development. Articles targeting PA at the workplace were located through a structured database search. Information on intervention strategies and PA outcomes were extracted. Only 13 studies (10.5%) reviewed focused on men, of which 5 showed significant increases in PA. These studies used generic, multicomponent, health promotion strategies with a variety of timeframes, self-report PA measures, and PA outcomes. The systematic review identified that evidence on the effectiveness of workplace PA interventions for men is equivocal and highlighted methodological concerns. Future research should use reliable and valid measures of PA and interventions that focus specifically on men's needs and PA preferences.</td></tr>
<tr><td>Purpose: To identify: (a) workplace interventions that reported on men’s PA outcomes; and (b) strategies that were effective for promoting PA in men.</td></tr>
<tr><td>Timeframe: Inception–October 2010</td></tr>
<tr><td>Total # of Studies: 14</td></tr>
<tr><td>Description of Intervention(s): Workplace interventions using generic strategies that combined PA promotion with smoking cessation and weight and stress management.</td></tr>
<tr><td>Outcomes Addressed: Change in men's PA or health
Costs Associated with the Intervention: Not reported
Examine Cardiorespiratory Fitness as Outcome: No</td></tr>
<tr><td>Populations Analyzed: Adults 18–60, Male</td><td>Author-Stated Funding Source: Australian Postgraduate Award Scholarship, the National Health and Medical Research Council Program Grant</td></tr>
</table>

Table 3. Existing Systematic Reviews and Meta-Analyses Quality Assessment Chart

AMSTARExBP: SR/MA							
	Arsenijevic, 2017	Attwood, 2016	Baker, 2015	Bopp 2012	Brown, 2012	Bully, 2015	Demetriou, 2012
Review questions and inclusion/exclusion criteria delineated prior to executing search strategy.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Population variables defined and considered in methods.	Yes	Yes	Yes	Yes	No	No	Yes
Was a comprehensive literature search performed?	Yes	Partially Yes	Yes	Yes	Yes	Yes	Yes
Duplicate study selection and data extraction performed.	No	Yes	Yes	No	No	Yes	No
Search strategy clearly described.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Relevant grey literature included in review.	No	No	No	No	No	No	No
List of studies (included and excluded) provided.	Yes	No	No	No	No	No	No
Characteristics of included studies provided.	No	Yes	Yes	Yes	Yes	Yes	Yes
FITT defined and examined in relation to outcome effect sizes.	No	N/A	N/A	N/A	N/A	N/A	Yes
Scientific quality (risk of bias) of included studies assessed and documented.	Yes	Yes	Yes	No	Yes	Yes	Yes
Results depended on study quality, either overall, or in interaction with moderators.	Yes	Yes	Yes	N/A	Yes	Yes	Yes
Scientific quality used appropriately in formulating conclusions.	Yes	Yes	Yes	N/A	Yes	Yes	Yes
Data appropriately synthesized and if applicable, heterogeneity assessed.	Yes	N/A	N/A	N/A	Partially Yes	N/A	N/A
Effect size index chosen justified, statistically.	Yes	N/A	N/A	N/A	Yes	N/A	N/A
Individual-level meta-analysis used.	No	N/A	N/A	N/A	N/A	N/A	N/A
Practical recommendations clearly addressed.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Likelihood of publication bias assessed.	Yes	No	No	No	No	No	No
Conflict of interest disclosed.	Yes	Yes	Yes	No	No	Yes	No

AMSTARExBP: SR/MA						
	Denison, 2014	Escalante, 2014	Finch, 2016	Gagliardi, 2015	Ickes, 2013	Laine, 2014
Review questions and inclusion/exclusion criteria delineated prior to executing search strategy.	Yes	Yes	Yes	Yes	Yes	Yes
Population variables defined and considered in methods.	No	No	No	No	No	No
Was a comprehensive literature search performed?	Yes	Yes	Yes	Yes	Yes	Yes
Duplicate study selection and data extraction performed.	Yes	No	Yes	Yes	No	Yes
Search strategy clearly described.	Yes	Yes	Yes	Yes	Yes	Yes
Relevant grey literature included in review.	No	No	No	No	No	No
List of studies (included and excluded) provided.	No	No	No	No	No	No
Characteristics of included studies provided.	Yes	Yes	Yes	Yes	Yes	Yes
FITT defined and examined in relation to outcome effect sizes.	N/A	N/A	No	N/A	N/A	N/A
Scientific quality (risk of bias) of included studies assessed and documented.	Yes	No	Yes	Yes	No	Yes
Results depended on study quality, either overall, or in interaction with moderators.	Yes	N/A	Yes	No	N/A	No
Scientific quality used appropriately in formulating conclusions.	Yes	N/A	Yes	No	N/A	Yes
Data appropriately synthesized and if applicable, heterogeneity assessed.	N/A	N/A	Yes	N/A	N/A	N/A
Effect size index chosen justified, statistically.	N/A	N/A	Yes	N/A	N/A	N/A
Individual-level meta-analysis used.	N/A	N/A	No	N/A	N/A	N/A
Practical recommendations clearly addressed.	Yes	Yes	Yes	Yes	Yes	Yes
Likelihood of publication bias assessed.	No	No	Yes	No	No	No
Conflict of interest disclosed.	Yes	Yes	Yes	Yes	No	No

AMSTARExBP: SR/MA	Lamming, 2017	Lonsdale, 2013	Malik, 2014	Mears, 2016	Mehtala, 2014	Melvin, 2017	Morton, 2015
Review questions and inclusion/exclusion criteria delineated prior to executing search strategy.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Population variables defined and considered in methods.	No	No	No	Yes	No	No	No
Was a comprehensive literature search performed?	Yes	Yes	Yes	Yes	Yes	Partially Yes	Partially Yes
Duplicate study selection and data extraction performed.	Yes	Yes	No	No	Yes	Yes	No
Search strategy clearly described.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Relevant grey literature included in review.	No	No	No	No	No	Yes	No
List of studies (included and excluded) provided.	No	No	No	No	No	Yes	No
Characteristics of included studies provided.	Yes	Yes	Yes	Yes	Yes	Yes	No
FITT defined and examined in relation to outcome effect sizes.	N/A	Yes	N/A	N/A	N/A	N/A	N/A
Scientific quality (risk of bias) of included studies assessed and documented.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Results depended on study quality, either overall, or in interaction with moderators.	No	Yes	Yes	Yes	Yes	No	Yes
Scientific quality used appropriately in formulating conclusions.	No	Yes	Yes	Yes	Yes	No	No
Data appropriately synthesized and if applicable, heterogeneity assessed.	N/A	Yes	N/A	Yes	N/A	N/A	N/A
Effect size index chosen justified, statistically.	N/A	Yes	N/A	Yes	N/A	N/A	N/A
Individual-level meta-analysis used.	N/A	No	N/A	No	N/A	N/A	N/A
Practical recommendations clearly addressed.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Likelihood of publication bias assessed.	No	Yes	No	No	No	No	No
Conflict of interest disclosed.	Yes	Yes	No	Yes	Yes	Yes	No

AMSTARExBP: SR/MA	Neidrick, 2012	Orrow, 2013	Osilla, 2012	Parra 2017	Parrish, 2013	Plotnikoff, 2015	Ramoa Castro, 2017
Review questions and inclusion/exclusion criteria delineated prior to executing search strategy.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Population variables defined and considered in methods.	No	No	No	No	Yes	Yes	No
Was a comprehensive literature search performed?	Yes	Yes	Yes	Yes	Yes	Partially Yes	Yes
Duplicate study selection and data extraction performed.	No	No	Yes	Yes	No	Yes	Yes
Search strategy clearly described.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Relevant grey literature included in review.	No	No	No	Yes	No	No	No
List of studies (included and excluded) provided.	No	No	No	No	No	No	No
Characteristics of included studies provided.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FITT defined and examined in relation to outcome effect sizes.	N/A	No	N/A	N/A	N/A	N/A	N/A
Scientific quality (risk of bias) of included studies assessed and documented.	Partially Yes	Yes	Partially Yes	Yes	Yes	Yes	Yes
Results depended on study quality, either overall, or in interaction with moderators.	No	No	Yes	Yes	Yes	Yes	No
Scientific quality used appropriately in formulating conclusions.	Yes	No	Yes	Yes	Yes	Yes	No
Data appropriately synthesized and if applicable, heterogeneity assessed.	N/A	Yes	N/A	N/A	N/A	N/A	N/A
Effect size index chosen justified, statistically.	N/A	Yes	N/A	N/A	N/A	N/A	N/A
Individual-level meta-analysis used.	N/A	No	N/A	N/A	N/A	N/A	N/A
Practical recommendations clearly addressed.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Likelihood of publication bias assessed.	No	Yes	No	No	No	No	No
Conflict of interest disclosed.	No	Yes	Yes	Yes	Yes	No	Yes

AMSTARExBP: SR/MA							
	Richards, 2016	Richards, 2016	Sanchez, 2015	Saraf, 2012	To, 2013	Torquati, 2015	Wong, 2012
Review questions and inclusion/exclusion criteria delineated prior to executing search strategy.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Population variables defined and considered in methods.	No	No	No	Yes	No	No	No
Was a comprehensive literature search performed?	Yes	Yes	Yes	Yes	Partially Yes	Yes	Yes
Duplicate study selection and data extraction performed.	No	No	No	No	No	Yes	No
Search strategy clearly described.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Relevant grey literature included in review.	No	No	No	No	No	No	No
List of studies (included and excluded) provided.	No	No	Yes	No	No	No	No
Characteristics of included studies provided.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FITT defined and examined in relation to outcome effect sizes.	N/A	N/A	No	N/A	N/A	N/A	N/A
Scientific quality (risk of bias) of included studies assessed and documented.	Partially Yes	Partially Yes	Yes	Yes	Yes	Yes	No
Results depended on study quality, either overall, or in interaction with moderators.	Yes	No	Yes	Yes	Yes	Yes	N/A
Scientific quality used appropriately in formulating conclusions.	Yes	No	Yes	Yes	Yes	Yes	N/A
Data appropriately synthesized and if applicable, heterogeneity assessed.	N/A	N/A	Yes	N/A	N/A	N/A	N/A
Effect size index chosen justified, statistically.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Individual-level meta-analysis used.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Practical recommendations clearly addressed.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Likelihood of publication bias assessed.	No	No	No	No	No	No	No
Conflict of interest disclosed.	No	Yes	No	Yes	Yes	No	Yes

High-Quality Existing Reports

Table 4. High-Quality Existing Reports Individual Evidence Summary Tables

<table>
<tr><th colspan="2">Schools</th></tr>
<tr><td colspan="2">Report: Summary/State of the Science
Citation: Pavey TG, Anokye N, Taylor AH, et al. The clinical effectiveness and cost-effectiveness of exercise referral schemes: a systematic review and economic evaluation. Health Technol Asses. 2011;15(44):1–254. doi:10.3310/hta15440.</td></tr>
<tr><td>Source/Sponsor: The Health Technology Assessment programme, part of the National Institute for Health Research.
Level of Impact: Community
Purpose: To assess the clinical effectiveness and cost-effectiveness of exercise referral schemes in people with a diagnosed condition known to benefit from PA.
Timeframe: 1990–October 2009
Description of Intervention(s): Exercise referral scheme exercise/PA programme needed to include one or a combination of counselling (face to face or via telephone), written materials, supervised training.
Outcomes Addressed: PA (self-report or objectively monitored), physical fitness (e.g., maximal oxygen uptake), health outcomes (e.g., blood lipids), adverse events (e.g., musculoskeletal injury), and uptake and adherence to exercise referral scheme.
Sedentary Behavior an Outcome: No
Examine cost, cost-effectivenesss or ROI: Yes
Examine Cardiorespiratory Fitness as Outcome: Yes</td><td>Abstract: Abstract: BACKGROUND: Exercise referral schemes (ERS) aim to identify inactive adults in the primary-care setting. The GP or health-care professional then refers the patient to a third-party service, with this service taking responsibility for prescribing and monitoring an exercise programme tailored to the needs of the individual.
OBJECTIVE: To assess the clinical effectiveness and cost-effectiveness of ERS for people with a diagnosed medical condition known to benefit from physical activity (PA). The scope of this report was broadened to consider individuals without a diagnosed condition who are sedentary.
DATA SOURCES: MEDLINE; EMBASE; PsycINFO; The Cochrane Library, ISI Web of Science; SPORTDiscus and ongoing trial registries were searched (from 1990 to October 2009) and included study references were checked.
METHODS: Systematic reviews: the effectiveness of ERS, predictors of ERS uptake and adherence, and the cost-effectiveness of ERS; and the development of a decision-analytic economic model to assess cost-effectiveness of ERS.
RESULTS: Seven randomised controlled trials (UK, n = 5; non-UK, n = 2) met the effectiveness inclusion criteria, five comparing ERS with usual care, two compared ERS with an alternative PA intervention, and one to an ERS plus a self-determination theory (SDT) intervention. In intention-to-treat analysis, compared with usual care, there was weak evidence of an increase in the number of ERS participants who achieved a self-reported 90-150 minutes of at least moderate-intensity PA per week at 6-12 months' follow-up [pooled relative risk (RR) 1.11, 95% confidence interval 0.99 to 1.25]. There was no consistent evidence of a difference between ERS and usual care in the duration of moderate/vigorous intensity and total PA or other outcomes, for example physical fitness, serum lipids, health-related quality of life (HRQoL). There was no between-group difference in outcomes between ERS and alternative PA interventions or ERS plus a SDT intervention. None of the included trials separately reported outcomes in individuals with medical diagnoses. Fourteen observational studies and five randomised controlled trials provided a numerical assessment of ERS uptake and adherence (UK, n =</td></tr>
</table>

	16; non-UK, n = 3). Women and older people were more likely to take up ERS but women, when compared with men, were less likely to adhere. The four previous economic evaluations identified suggest ERS to be a cost-effective intervention. Indicative incremental cost per quality-adjusted life-year (QALY) estimates for ERS for various scenarios were based on a de novo model-based economic evaluation. Compared with usual care, the mean incremental cost for ERS was £169 and the mean incremental QALY was 0.008, with the base-case incremental cost-effectiveness ratio at £20,876 per QALY in sedentary people without a medical condition and a cost per QALY of £14,618 in sedentary obese individuals, £12,834 in sedentary hypertensive patients, and £8414 for sedentary individuals with depression. Estimates of cost-effectiveness were highly sensitive to plausible variations in the RR for change in PA and cost of ERS. LIMITATIONS: We found very limited evidence of the effectiveness of ERS. The estimates of the cost-effectiveness of ERS are based on a simple analytical framework. The economic evaluation reports small differences in costs and effects, and findings highlight the wide range of uncertainty associated with the estimates of effectiveness and the impact of effectiveness on HRQoL. No data were identified as part of the effectiveness review to allow for adjustment of the effect of ERS in different populations. CONCLUSIONS: There remains considerable uncertainty as to the effectiveness of ERS for increasing activity, fitness or health indicators or whether they are an efficient use of resources in sedentary people without a medical diagnosis. We failed to identify any trial-based evidence of the effectiveness of ERS in those with a medical diagnosis. Future work should include randomised controlled trials assessing the cinical effectiveness and cost-effectivenesss of ERS in disease groups that may benefit from PA.
Populations Analyzed: Adults	**Author-Stated Funding Source:** The National Institute for Health Research Health Technology Assessment programme

<table>
<tr><th colspan="2">Schools</th></tr>
<tr><td colspan="2">Report: Summary/State of the Science
Citation: Mozaffarian D, Afshin A, Benowitz NL, et al. American Heart Association Council on Epidemiology and Prevention, Council on Nutrition, Physical Activity and Metabolism, Council on Clinical Cardiology, Council on Cardiovascular Disease in the Young, Council on the Kidney in Cardiovasc. Population approaches to improve diet, physical activity, and smoking habits: a scientific statement from the American Heart Association. Circulation. 2012;126(12):1514–1563. doi:10.1161/CIR.0b013e318260a20b.</td></tr>
<tr><td>Source/Sponsor: American Heart Association</td><td rowspan="6">Abstract: BACKGROUND: Poor lifestyle behaviors, including suboptimal diet, physical inactivity, and tobacco use, are leading causes of preventable diseases globally. Although even modest population shifts in risk substantially alter health outcomes, the optimal population-level approaches to improve lifestyle are not well established.
METHODS AND RESULTS: For this American Heart Association scientific statement, the writing group systematically reviewed and graded the current scientific evidence for effective population approaches to improve dietary habits, increase physical activity, and reduce tobacco use. Strategies were considered in 6 broad domains: (1) Media and educational campaigns; (2) labeling and consumer information; (3) taxation, subsidies, and other economic incentives; (4) school and workplace approaches; (5) local environmental changes; and (6) direct restrictions and mandates. The writing group also reviewed the potential contributions of healthcare systems and surveillance systems to behavior change efforts. Several specific population interventions that achieved a Class I or IIa recommendation with grade A or B evidence were identified, providing a set of specific evidence-based strategies that deserve close attention and prioritization for wider implementation. Effective interventions included specific approaches in all 6 domains evaluated for improving diet, increasing activity, and reducing tobacco use. The writing group also identified several specific interventions in each of these domains for which current evidence was less robust, as well as other inconsistencies and evidence gaps, informing the need for further rigorous and interdisciplinary approaches to evaluate population programs and policies.
CONCLUSIONS: This systematic review identified and graded the evidence for a range of population-based strategies to promote lifestyle change. The findings provide a framework for policy makers, advocacy groups, researchers, clinicians, communities, and other stakeholders to understand and implement the most effective approaches. New strategic initiatives and partnerships are needed to translate this evidence into action.</td></tr>
<tr><td>Level of Impact: Community</td></tr>
<tr><td>Purpose: To determine what population approaches work and should be implemented to improve PA, which deserve further intensive investigation, and what critical research gaps remain.</td></tr>
<tr><td>Timeframe: 2007–2012</td></tr>
<tr><td>Description of Intervention(s):
Media or educational campaigns (e.g., television, radio, print, or billboard advertising). Labeling/information (e.g., use of signage to increase use of stairs). Economic incentives/subsidies to promote PA (e.g., incentives to purchase exercise equipment). School-based approaches to improve PA. Workplace-based approaches to improve PA. Local environment change for PA. Direct restrictions and mandates.</td></tr>
<tr><td>Outcomes Addressed: Change in PA.
Sedentary Behavior an Outcome: No</td></tr>
<tr><td>Examine cost, cost-effectivenesss or ROI: Not reported
Examine Cardiorespiratory Fitness as Outcome: No</td><td></td></tr>
</table>

Populations Analyzed: Age not reported	**Author-Stated Funding Source:** American Heart Association Council on Epidemiology and Prevention, Council on Nutrition, Physical Activity and Metabolism, Council on Clinical Cardiology, Council on Cardiovascular Disease in the Young, Council on the Kidney in Cardiovascular Disease, Council on Peripheral Vascular Disease, and the Advocacy Coordinating Committee

<table>
<tr><th colspan="2">Childcare and Preschool, Community-Wide, Schools</th></tr>
<tr><td colspan="2">Report: Guidelines
Citation: U.S. Department of Health and Human Services. Physical Activity Guidelines for Americans Midcourse Report Subcommittee of the President's Council on Fitness, Sports & Nutrition. Physical Activity Guidelines for Americans Midcourse Report: Strategies to Increase Physical Activity Among Youth. Washington, DC: U.S. Department of Health and Human Services; 2012.</td></tr>
<tr><td>Source/Sponsor: Office of Disease Prevention and Health Promotion, President's Council on Fitness, Sports, and Nutrition, U.S. Department of Health and Human Services</td><td rowspan="5">Relevant Conclusions: Sufficient evidence is available to recommend wide implementation of multi component school-based programs. These types of programs provide enhanced physical education, as well as classroom activity breaks, activity sessions before and/or after school, and active transportation to school.</td></tr>
<tr><td>Purpose: To identify interventions that can help increase PA in youth across a variety of settings.</td></tr>
<tr><td>Timeframe: 2001–July 2012</td></tr>
<tr><td>Description of Intervention: Interventions to improve physical activity among youth. Separated by intervention setting, including school setting (multi-component school-based interventions, physical education, active transportation to school, activity breaks, school physical environment, after-school interventions), preschool and child care settings, community setting (the built environment, camps and youth organizations, other community-based programs), family and home setting, primary health care setting.</td></tr>
<tr><td>Outcomes Addressed: PA level.
Examine Cardiorespiratory Fitness as Outcome: No</td></tr>
<tr><td>Populations Analyzed: Children 3–17</td><td>Author-Stated Funding Source: Not reported</td></tr>
</table>

Table 5. High-Quality Existing Reports Quality Assessment Chart

Report Quality Assessment			
	DHHS, 2012	Mozaffarian, 2012	Pavey, 2011
Research question(s) or purpose and inclusion/exclusion criteria or scope delineated prior to search.	Yes	Yes	Yes
Inclusion criteria permitted grey literature.	No	Yes	No
Comprehensive search performed.	Yes	Yes	Yes
Scientific quality of sources documented.	No	No	Yes
Limitations reported and discussed.	Yes	No	Yes
Conclusions substantiated by and logically connected to evidence and findings.	Yes	Yes	Yes
Recommendations for future research provided.	Yes	Yes	Yes
Recommendations were relevant to the report and supported by evidence, findings, and conclusions.	Yes	Yes	Yes
Potential conflicts of interest explained.	No	Yes	Yes
Reference list provided.	Yes	Yes	Yes

Appendices

Appendix A: Analytical Framework

Topic Area
Physical Activity Promotion

Systematic Review Questions
What interventions are effective for increasing physical activity?

a. Does the effectiveness vary by age, sex, race/ethnicity, or socio-economic status?

Population
People of all ages

Intervention
Physical activity intervention(s) at different levels of impact

- Individual
- Community setting
- Built/Neighborhood Environment
- Policy & Legislative
- Information Technology

Endpoint Health Outcomes
Physical activity behavior change

Key Definition: Intervention: any kind of planned activity or group of activities (including programs, policies, and laws) designed to prevent disease or injury or promote health in a group of people, about which a single summary conclusion can be drawn (*The Community Guide* http://www.thecommunityguide.org/about/glossary.html).

Appendix B: Final Search Strategy

Research Question

What interventions are effective for increasing physical activity?[1]

Search Strategy: PubMed (Systematic Reviews, Meta-Analyses, Pooled Analyses, and High-Quality Reports)

Database: PubMed; Date of Search: 12/29/2016; 1,669 results

Set	Search Strategy
Limit: Language	(English[lang])
Limit: Exclude animal only	NOT ("Animals"[Mesh] NOT ("Animals"[Mesh] AND "Humans"[Mesh]))
Limit: Exclude child only	NOT (("infant"[Mesh] OR "child"[mesh] OR "adolescent"[mh]) NOT (("infant"[Mesh] OR "child"[mesh] OR "adolescent"[mh]) AND "adult"[Mesh]))
Limit: Exclude subheadings	NOT (ad[sh] OR aa[sh] OR ci[sh] OR cn[sh] OR dh[sh] OR de[sh] OR dt[sh] OR em[sh] OR en[sh] OR es[sh] OR eh[sh] OR ge[sh] OR hi[sh] OR is[sh] OR ip[sh] OR lj[sh] OR ma[sh] OR mi[sh] OR og[sh] OR ps[sh] OR py[sh] OR pk[sh] OR pd[sh] OR po[sh] OR re[sh] OR rt[sh] OR rh[sh] OR st[sh] OR sd[sh] OR tu[sh] OR th[sh] OR tm[sh] OR tr[sh] OR ut[sh] OR ve[sh] OR vi[sh])
Limit: Publication Date (Systematic Reviews/Meta-Analyses)	AND ("2000/01/01"[PDAT] : "3000/12/31"[PDAT])
Limit: Publication Type Include (Systematic Reviews/Meta-Analyses)	AND (systematic[sb] OR meta-analysis[pt] OR “systematic review”[tiab] OR “systematic literature review”[tiab] OR metaanalysis[tiab] OR "meta analysis"[tiab] OR metanalyses[tiab] OR "meta analyses"[tiab] OR "pooled analysis"[tiab] OR “pooled analyses”[tiab] OR "pooled data"[tiab])
Limit: Publication Type Exclude (Systematic Reviews/Meta-Analyses)	NOT (“comment”[Publication Type] OR “editorial”[Publication Type])
Physical Activity	(("Exercise"[mh] OR "Exercise"[tiab] OR "Leisure activities"[mh] OR "Physical activity"[tiab] OR "Physical inactivity"[tiab] OR "Sedentary lifestyle"[mh] OR "Computer time"[tiab] OR "Computer use"[tiab] OR "Inactivity"[tiab] OR "Physically inactive"[tiab] OR "Screen time"[tiab] OR "Television"[tiab] OR "TV viewing"[tiab] OR "TV watching"[tiab] OR "Video game"[tiab] OR "Video gaming"[tiab]) OR (("Aerobic activities"[tiab] OR "Aerobic activity"[tiab] OR "Cardiovascular activities"[tiab] OR "Cardiovascular activity"[tiab] OR "Endurance activities"[tiab] OR "Endurance activity"[tiab] OR "Energy expenditure"[tiab] OR "Leisure activities"[tiab] OR "Resistance training"[tiab] OR

[1] Search strategy was conducted for all levels of influence (i.e., individual, community, built environment, policy, technology).

Set	Search Strategy
	"strength training"[tiab] OR "Sitting"[tiab] OR “Sedentarism”[tiab] OR “Sedentary”[tiab] OR "physical conditioning"[tiab] OR "walking"[tiab]) NOT medline[sb]))
Intervention	AND (("Intervention"[tiab] OR "Interventions"[tiab] OR "Trial"[tiab] OR "Trials"[tiab] OR "Initiative"[tiab] OR "Initiatives"[tiab] OR "behavior change"[tiab] OR "Behavioral change"[tiab] OR "strategies"[tiab] OR "program"[tiab] OR "programs"[tiab] OR "programme"[tiab] OR “programmes”[tiab] OR "Behaviour modification"[tiab] OR "Behaviour modification"[tiab] OR "Behaviour change"[tiab] OR "behavioural change"[tiab]) OR (("health education"[tiab] OR "health promotion"[tiab]) NOT medline[sb]))
Levels of Impact	AND ("technology"[tiab] OR "Technologies"[tiab] OR "social media"[tiab] OR "twitter"[tiab] OR "facebook"[tiab] OR "cell phone"[tiab] OR "smartphone"[tiab] OR "mobile phone"[tiab] OR "mobile applications"[tiab] OR "apps"[tiab] OR "text messaging"[tiab] OR "mobile health"[tiab] OR "telemedicine"[tiab] OR "web-based"[tiab] OR "electronic mail"[tiab] OR "e-mail"[tiab] OR "internet"[tiab] OR "wearable"[tiab] OR "monitoring sensors"[tiab] OR "GPS"[tiab] OR "interactive voice response"[tiab] OR "embodied conversational agent"[tiab] OR "virtual"[tiab] OR "electronic tablet"[tiab] OR "tablet-based"[tiab] OR "computers"[tiab] OR "handheld"[tiab] OR "digital health"[tiab] OR "eHealth"[tiab] OR "on-line systems"[tiab] OR "online systems"[tiab] OR "software"[tiab] OR "multimedia"[tiab] OR "activity monitor"[tiab] OR "accelerometer"[tiab] OR "actigraphy"[tiab] OR "pedometer"[tiab] OR "fitness monitor"[tiab] OR "pedometery"[tiab] OR "step counter"[tiab] OR "artificial intelligence"[tiab] OR "telehealth"[tiab] OR "mHealth"[tiab]) OR ("Individual"[tiab] OR "Individuals"[tiab] OR "Person centered"[tiab] OR "self management"[tiab] OR "home-based"[tiab] OR "lifestyle"[tiab] OR "family based"[tiab] OR "self monitoring"[tiab] OR "life style"[mh] OR "life style"[tiab] OR "quantified self"[tiab]) OR ("Built environment"[tiab] OR neighborhood*[tiab] OR neighbourhood*[tiab] OR "land use"[tiab] OR "urban form"[tiab] OR "pedestrian"[tiab] OR "health community design"[tiab] OR "mix use"[tiab] OR "environmental enhancement"[tiab] OR "objective environment"[tiab] OR "spatial"[tiab] OR "physical environment"[tiab] OR "streetscape"[tiab] OR "urban planning"[tiab] OR "walkability"[tiab] OR "pedestrian-friendly"[tiab] OR "urban renewal"[tiab] OR "active transport"[tiab] OR "active commute"[tiab] OR "Active commuting"[tiab] OR "geospatial"[tiab] OR “environment design”[tiab] OR "sidewalk"[tiab] OR "bike lane"[tiab])

Set	Search Strategy
	OR("Community Settings"[tiab] OR "community based"[tiab] OR "community wide"[tiab] OR "state wide"[tiab] OR "nationwide"[tiab] OR "community group"[tiab] OR "organization-based"[tiab] OR "school"[tiab] OR "place of worship"[tiab] OR "church"[tiab] OR "faith-based"[tiab] OR "worksite"[tiab] OR "workplace"[tiab] OR "recreational setting"[tiab] OR "YMCA"[tiab] OR "childcare"[tiab] OR "education setting"[tiab] OR "early care"[tiab] OR "Schools"[tiab]) OR ("policy"[tiab] OR "policies"[tiab] OR "legislative"[tiab] OR "legislation"[tiab] OR "law"[tiab] OR "population-level"[tiab] OR "statute"[tiab] OR "statutes"[tiab] OR "Regulation"[tiab] OR "Regulations"[tiab] OR “Ordinance”[tiab])

Search Strategy: CINAHL (Systematic Reviews, Meta-Analyses, Pooled Analyses, and High-Quality Reports)

Database: CINAHL; Date of Search: 12/29/16; 81 results

Set	Search Terms
Physical Activity	("Exercise" OR "Physical activity" OR "Physical inactivity" OR "Computer time" OR "Computer use" OR "Inactivity" OR "Physically inactive" OR "Screen time" OR "Television" OR "TV viewing" OR "TV watching" OR "Video game" OR "Video gaming" OR "Aerobic activities" OR "Aerobic activity" OR "Cardiovascular activities" OR "Cardiovascular activity" OR "Endurance activities" OR "Endurance activity" OR "Energy expenditure" OR "Leisure activities" OR "Resistance training" OR "strength training" OR "Sitting" OR "Sedentarism" OR "Sedentary" OR "physical conditioning" OR "walking")
Intervention	AND ("Intervention" OR "Interventions" OR "Trial" OR "Trials" OR "Initiative" OR "Initiatives" OR "behavior change" OR "Behavioral change" OR "strategies" OR "program" OR "programs" OR "programme" OR "programmes" OR "Behaviour modification" OR "Behaviour modification" OR "Behaviour change" OR "behavioural change" OR "health education" OR "health promotion")
Levels of Impact	AND ("technology" OR "Technologies" OR "social media" OR "twitter" OR "facebook" OR "cell phone" OR "smartphone" OR "mobile phone" OR "mobile applications" OR "apps" OR "text messaging" OR "mobile health" OR "telemedicine" OR "web-based" OR "electronic mail" OR "e-mail" OR "internet" OR "wearable" OR "monitoring sensors" OR "GPS" OR "interactive voice response" OR "embodied conversational agent" OR "virtual" OR "electronic tablet" OR "tablet-based" OR "computers" OR "handheld" OR "digital health" OR "eHealth" OR "on-line systems" OR "online systems" OR "software" OR "multimedia" OR "activity monitor" OR "accelerometer" OR "actigraphy" OR "pedometer" OR "fitness monitor" OR "pedometery" OR "step counter" OR "artificial intelligence" OR "telehealth" OR "mHealth") OR ("Individual" OR "Individuals" OR "Person centered" OR "self management" OR "home-based" OR "lifestyle" OR "family based" OR "self monitoring" OR "life style" OR "quantified self") OR ("Built environment" OR neighborhood*OR neighbourhood*OR "land use" OR "urban form" OR "pedestrian" OR "health community design" OR "mix use" OR "environmental enhancement" OR "objective environment" OR "spatial" OR "physical environment" OR "streetscape" OR "urban planning" OR "walkability" OR "pedestrian-friendly" OR "urban renewal" OR "active transport" OR "active commute" OR "Active commuting" OR "geospatial" OR "environment design" OR "sidewalk" OR "bike lane")

Set	Search Terms
	OR ("Community Settings" OR "community based" OR "community wide" OR "state wide" OR "nationwide" OR "community group" OR "organization-based" OR "school" OR "place of worship" OR "church" OR "faith-based" OR "worksite" OR "workplace" OR "recreational setting" OR "YMCA" OR "childcare" OR "education setting" OR "early care" OR "Schools") OR ("policy" OR "policies" OR "legislative" OR "legislation" OR "law" OR "population-level" OR "statute" OR "statutes" OR "Regulation" OR "Regulations" OR "Ordinance")
Systematic Reviews/Meta-Analyses	AND ("systematic review" OR "systematic literature review" OR metaanalysis OR "meta analysis" OR "metanalyses" OR "meta analyses"" OR "pooled analysis" OR "pooled analyses" OR "pooled data")
Limits	2000-present English language Peer reviewed Exclude Medline records Human

Search Strategy: Cochrane (Systematic Reviews, Meta-Analyses, Pooled Analyses, and High-Quality Reports)

Database: Cochrane, Date of Search: 12/29/16; 580 results

Set	Search Terms
Physical Activity	("Exercise" OR "Physical activity" OR "Physical inactivity" OR "Computer time" OR "Computer use" OR "Inactivity" OR "Physically inactive" OR "Screen time" OR "Television" OR "TV viewing" OR "TV watching" OR "Video game" OR "Video gaming" OR "Aerobic activities" OR "Aerobic activity" OR "Cardiovascular activities" OR "Cardiovascular activity" OR "Endurance activities" OR "Endurance activity" OR "Energy expenditure" OR "Leisure activities" OR "Resistance training" OR "strength training" OR "Sitting" OR "Sedentarism" OR "Sedentary" OR "physical conditioning" OR "walking")
Intervention	AND ("Intervention" OR "Interventions" OR "Trial" OR "Trials" OR "Initiative" OR "Initiatives" OR "behavior change" OR "Behavioral change" OR "strategies" OR "program" OR "programs" OR "programme" OR "programmes" OR "Behaviour modification" OR "Behaviour modification" OR "Behaviour change" OR "behavioural change" OR "health education" OR "health promotion")
Technology	AND ("technology" OR "Technologies" OR "social media" OR "twitter" OR "facebook" OR "cell phone" OR "smartphone" OR "mobile phone" OR "mobile applications" OR "apps" OR "text messaging" OR "mobile health" OR "telemedicine" OR "web-based" OR "electronic mail" OR "e-mail" OR "internet" OR "wearable" OR "monitoring sensors" OR "GPS" OR "interactive voice response" OR "embodied conversational agent" OR "virtual" OR "electronic tablet" OR "tablet-based" OR "computers" OR "handheld" OR "digital health" OR "eHealth" OR "on-line systems" OR "online systems" OR "software" OR "multimedia" OR "activity monitor" OR "accelerometer" OR "actigraphy" OR "pedometer" OR "fitness monitor" OR "pedometery" OR "step counter" OR "artificial intelligence" OR "telehealth" OR "mHealth") OR ("Individual" OR "Individuals" OR "Person centered" OR "self management" OR "home-based" OR "lifestyle" OR "family based" OR "self monitoring" OR "life style" OR "quantified self") OR ("Built environment" OR neighborhood*OR neighbourhood*OR "land use" OR "urban form" OR "pedestrian" OR "health community design" OR "mix use" OR "environmental enhancement" OR "objective environment" OR "spatial" OR "physical environment" OR "streetscape" OR "urban planning" OR "walkability" OR "pedestrian-friendly" OR "urban renewal" OR "active transport" OR "active commute" OR "Active commuting" OR "geospatial" OR "environment design" OR "sidewalk" OR "bike lane")

Set	Search Terms
	OR ("Community Settings" OR "community based" OR "community wide" OR "state wide" OR "nationwide" OR "community group" OR "organization-based" OR "school" OR "place of worship" OR "church" OR "faith-based" OR "worksite" OR "workplace" OR "recreational setting" OR "YMCA" OR "childcare" OR "education setting" OR "early care" OR "Schools") OR ("policy" OR "policies" OR "legislative" OR "legislation" OR "law" OR "population-level" OR "statute" OR "statutes" OR "Regulation" OR "Regulations" OR "Ordinance")
Limits	Title, abstract, keyword 2000-present Cochrane Reviews and Other Reviews Word variations not be searched

Supplemental Search Strategy: PubMed (Systematic Reviews, Meta-Analyses, Pooled Analyses, and High-Quality Reports related to Primary Care)[2]

Database: PubMed; Date of Search: 5/31/2017; 65 results

Set	Search Strategy
Limit: Language	(English[lang])
Limit: Exclude animal only	NOT ("Animals"[Mesh] NOT ("Animals"[Mesh] AND "Humans"[Mesh]))
Limit: Exclude child only	NOT (("infant"[Mesh] OR "child"[mesh] OR "adolescent"[mh]) NOT (("infant"[Mesh] OR "child"[mesh] OR "adolescent"[mh]) AND "adult"[Mesh]))
Limit: Exclude subheadings	NOT (ad[sh] OR aa[sh] OR ci[sh] OR cn[sh] OR dh[sh] OR de[sh] OR dt[sh] OR em[sh] OR en[sh] OR es[sh] OR eh[sh] OR ge[sh] OR hi[sh] OR is[sh] OR ip[sh] OR lj[sh] OR ma[sh] OR mi[sh] OR og[sh] OR ps[sh] OR py[sh] OR pk[sh] OR pd[sh] OR po[sh] OR re[sh] OR rt[sh] OR rh[sh] OR st[sh] OR sd[sh] OR tu[sh] OR th[sh] OR tm[sh] OR tr[sh] OR ut[sh] OR ve[sh] OR vi[sh])
Limit: Publication Date (Systematic Reviews/Meta-Analyses)	AND ("2011/01/01"[PDAT] : "3000/12/31"[PDAT])
Limit: Publication Type Include (Systematic Reviews/Meta-Analyses)	AND (systematic[sb] OR meta-analysis[pt] OR “systematic review”[tiab] OR “systematic literature review”[tiab] OR metaanalysis[tiab] OR "meta analysis"[tiab] OR metanalyses[tiab] OR "meta analyses"[tiab] OR "pooled analysis"[tiab] OR “pooled analyses”[tiab] OR "pooled data"[tiab])
Limit: Publication Type Exclude (Systematic Reviews/Meta-Analyses)	NOT (“comment”[Publication Type] OR “editorial”[Publication Type])
Physical Activity	AND (("Exercise"[mh] OR "Exercise"[tiab] OR "Leisure activities"[mh] OR "Physical activity"[tiab] OR "Physical inactivity"[tiab] OR "Sedentary lifestyle"[mh] OR "Computer time"[tiab] OR "Computer use"[tiab] OR "Inactivity"[tiab] OR "Physically inactive"[tiab] OR "Screen time"[tiab] OR "Television"[tiab] OR "TV viewing"[tiab] OR "TV watching"[tiab] OR "Video game"[tiab] OR "Video gaming"[tiab]) OR (("Aerobic activities"[tiab] OR "Aerobic activity"[tiab] OR "Cardiovascular activities"[tiab] OR "Cardiovascular activity"[tiab] OR "Endurance activities"[tiab] OR "Endurance activity"[tiab] OR "Energy expenditure"[tiab] OR "Leisure activities"[tiab] OR "Resistance training"[tiab] OR "strength training"[tiab] OR "Sitting"[tiab] OR “Sedentarism”[tiab] OR “Sedentary”[tiab] OR "physical conditioning"[tiab] OR "walking"[tiab]) NOT medline[sb]))

[2] A supplemental search was conducted on May 31, 2017, to capture relevant systematic reviews, meta-analyses, pooled analyses, and high-quality reports related to primary care interventions since relevant literature was not captured in the original search.

Set	Search Strategy
Intervention	AND (("Intervention"[tiab] OR "Interventions"[tiab] OR "Trial"[tiab] OR "Trials"[tiab] OR "Initiative"[tiab] OR "Initiatives"[tiab] OR "behavior change"[tiab] OR "Behavioral change"[tiab] OR "strategies"[tiab] OR "program"[tiab] OR "programs"[tiab] OR "programme"[tiab] OR "programmes"[tiab] OR "Behaviour modification"[tiab] OR "Behaviour modification"[tiab] OR "Behaviour change"[tiab] OR "behavioural change"[tiab]) OR (("health education"[tiab] OR "health promotion"[tiab]) NOT medline[sb]))
Primary Care	AND (("Primary Health Care"[mh] OR "Physicians, Family"[mh] OR "Family Practice"[mh] OR "primary care"[tiab] OR "family physician"[tiab] OR "family doctor"[tiab]))

Supplemental Search Strategy: CINAHL (Systematic Reviews, Meta-Analyses, Pooled Analyses, and High-Quality Reports related to Primary Care)

Database: CINAHL; Date of Search: 5/31/2017; 8 results

Set	Search Terms
Physical Activity	("Exercise" OR "Physical activity" OR "Physical inactivity" OR "Computer time" OR "Computer use" OR "Inactivity" OR "Physically inactive" OR "Screen time" OR "Television" OR "TV viewing" OR "TV watching" OR "Video game" OR "Video gaming" OR "Aerobic activities" OR "Aerobic activity" OR "Cardiovascular activities" OR "Cardiovascular activity" OR "Endurance activities" OR "Endurance activity" OR "Energy expenditure" OR "Leisure activities" OR "Resistance training" OR "strength training" OR "Sitting" OR "Sedentarism" OR "Sedentary" OR "physical conditioning" OR "walking")
Intervention	AND ("Intervention" OR "Interventions" OR "Trial" OR "Trials" OR "Initiative" OR "Initiatives" OR "behavior change" OR "Behavioral change" OR "strategies" OR "program" OR "programs" OR "programme" OR "programmes" OR "Behaviour modification" OR "Behaviour modification" OR "Behaviour change" OR "behavioural change" OR "health education" OR "health promotion")
Primary Care	AND ("Primary Health Care" OR "Family Practice" OR "primary care" OR "family doctor" OR "family physician")
Systematic Reviews/Meta-Analyses	AND ("systematic review" OR "systematic literature review" OR metaanalysis OR "meta analysis" OR "metanalyses" OR "meta analyses"" OR "pooled analysis" OR "pooled analyses" OR "pooled data")
Limits	2011-present English language Peer reviewed Exclude Medline records Human

Supplemental Search Strategy: Cochrane (Systematic Reviews, Meta-Analyses, Pooled Analyses, and High-Quality Reports related to Primary Care)

Database: Cochrane; Date of Search: 5/31/2017; 13 results

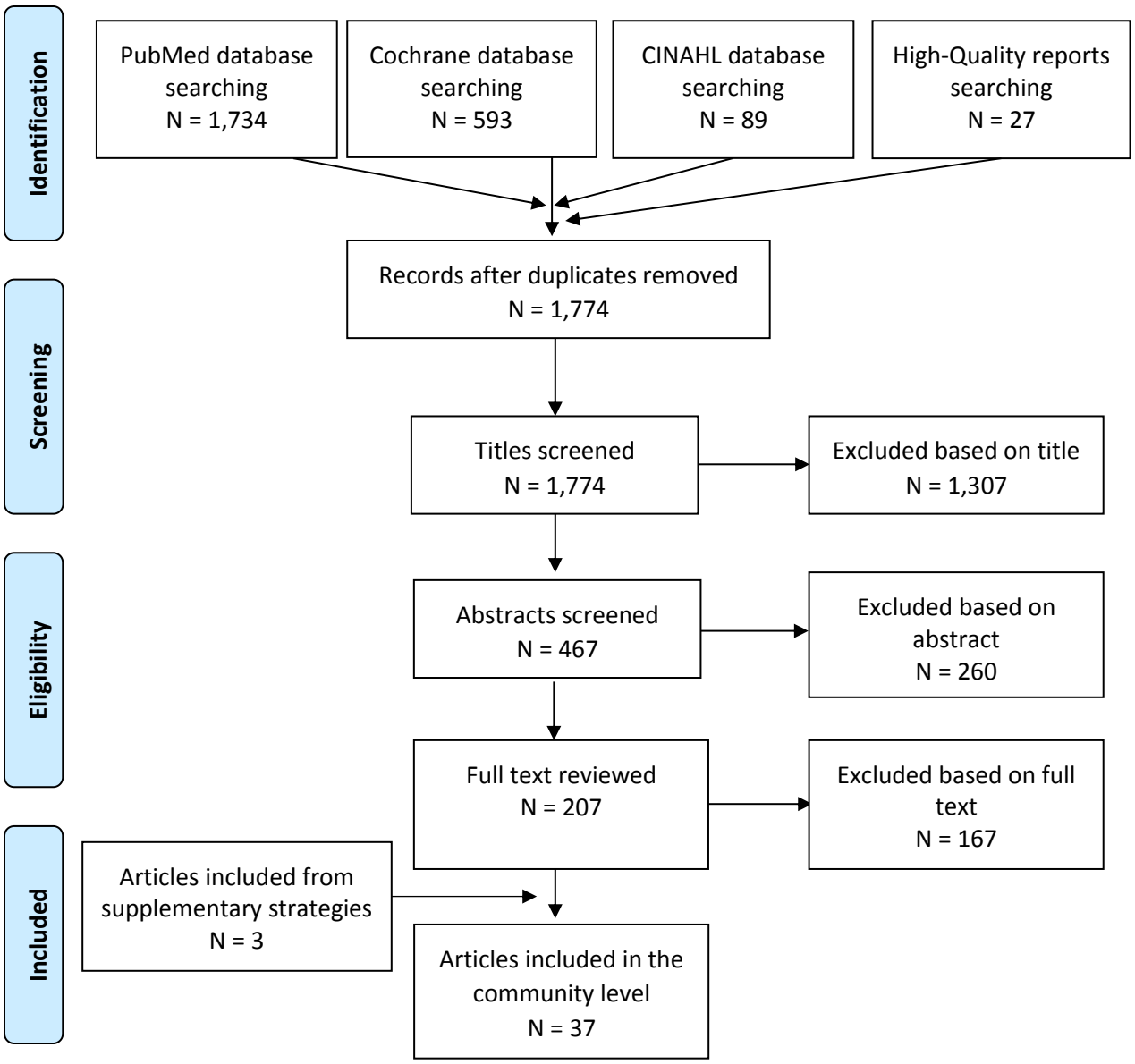
Set	Search Terms
Physical Activity	("Exercise" OR "Physical activity" OR "Physical inactivity" OR "Computer time" OR "Computer use" OR "Inactivity" OR "Physically inactive" OR "Screen time" OR "Television" OR "TV viewing" OR "TV watching" OR "Video game" OR "Video gaming" OR "Aerobic activities" OR "Aerobic activity" OR "Cardiovascular activities" OR "Cardiovascular activity" OR "Endurance activities" OR "Endurance activity" OR "Energy expenditure" OR "Leisure activities" OR "Resistance training" OR "strength training" OR "Sitting" OR "Sedentarism" OR "Sedentary" OR "physical conditioning" OR "walking")
Intervention	AND ("Intervention" OR "Interventions" OR "Trial" OR "Trials" OR "Initiative" OR "Initiatives" OR "behavior change" OR "Behavioral change" OR "strategies" OR "program" OR "programs" OR "programme" OR "programmes" OR "Behaviour modification" OR "Behaviour modification" OR "Behaviour change" OR "behavioural change" OR "health education" OR "health promotion")
Primary care	AND ("Primary Health Care" OR "Family Practice" OR "primary care" OR "family doctor" OR "family physician")
Limits	Title, abstract, keyword 2011-present Cochrane Reviews and Other Reviews Word variations not be searched

Supplementary Strategies:

At full text review, members of the Physical Activity Promotion Subcommittee suggested relevant reviews that were not captured by the search strategies, as part of expert consultation. Two relevant systematic reviews[7, 8] and one report[31] were suggested by the Physical Activity Promotion Subcommittee lead and included as sources of evidence.

Appendix C: Literature Tree

Existing Systematic Reviews, Meta-Analyses, Pooled Analyses, and Reports Literature Tree



Appendix D: Inclusion/Exclusion Criteria

Physical Activity Promotion Subcommittee

What interventions are effective for increasing physical activity?

a. Does the effectiveness vary by age, sex, race/ethnicity, or socio-economic status?

Category	Inclusion/Exclusion Criteria	Notes/Rationale
Publication Language	**Include:** • Studies published with full text in English	
Publication Status	**Include:** • Studies published in peer-reviewed journals • Reports determined to have appropriate suitability and quality by PAGAC **Exclude:** • Grey literature, including unpublished data, manuscripts, abstracts, conference proceedings	
Research Type	**Include:** • Original research* • Systematic reviews • Meta-analyses • Pooled analyses • Reports determined to have appropriate suitability and quality by PAGAC	*The initial search conducted with systematic reviews, meta-analyses, and reports. If needed, *de novo* reviews will be conducted only to supplement the reviews.
Study Subjects	**Include:** • Human subjects	
Age of Study Subjects	**Include:** • People of all ages	
Health Status of Study Subjects	**Exclude:** • Hospitalized patients • Non-ambulatory individuals	
Comparison	**Exclude:** • Studies comparing athletes to non-athletes • Studies comparing athlete types (e.g., comparing runners to soccer players)	
Date of Publication	**Include:** • Systematic reviews, meta-analyses, and reports published from 2011–2016 • Original research (included to supplement systematic review categories) published 2011–2016	The SC revised inclusion dates from 2000–2016 to 2011–2016 after the search strategy was implemented due to substantial amount of relevant recent literature.
Study Design	**Include:** • Systematic reviews	*Original research with these study designs will be

	• Meta-analyses • Reports determined to have appropriate suitability and quality by PAGAC • Randomized controlled trials* • Non-randomized controlled trials* • Prospective cohort studies* • Retrospective cohort studies* • Case-control studies* • Before-and-after studies* • Time series studies* • Cross-sectional studies **Exclude:** • Case studies • Narrative reviews • Commentaries • Editorials	secondary to the systematic review categories, and will be used to capture the latest evidence not reflected in the systematic reviews.
Intervention/ Exposure	**Include studies in which the exposure is:** All types of physical activity interventions or program**s** **Exclude:** • Studies that do not include a physical activity intervention or program • Studies that do not include physical activity change as a reported outcome variable • Activity studies missing physical activity (mental games such as Sudoku instead of physical activities) • Studies of a single, acute bout of exercise • Studies of a specific therapeutic exercise delivered by a medical professional (e.g., physical therapist) • Studies where the outcome is/are measures of physical fitness (e.g., cardiovascular fitness, strength, flexibility) rather than physical activity • Sedentary behavior only • Sedentary interventions or programs only	
Comparison	**Exclude:** • Studies comparing athletes to non-athletes • Studies comparing athlete types (e.g., comparing runners to soccer players)	
Outcome	**Include studies in which the outcome is:** • Physical activity change	

Appendix E: Rationale for Exclusion at Abstract or Full-Text Triage for Existing Systematic Reviews, Meta-Analyses, Pooled Analyses, and Reports

The table below lists the excluded articles with at least one reason for exclusion, but may not reflect all possible reasons.

Citation	Outcome	Study Design	Exposure	Not ideal fit for replacement of de novo search	Other
Adams J, White M. Are activity promotion interventions based on the transtheoretical model effective? a critical review. *Br J Sports Med*. 2003;37(2):106-114. doi:10.1136/bjsm.37.2.106.		X			
Allender S, Hutchinson L, Foster C. Life-change events and participation in physical activity: a systematic review. *Health Promot Int*. 2008;23(2):160-172. doi:10.1093/heapro/dan012.			X		
Amiri Farahani L, Asadi-Lari M, Mohammadi E, Parvizy S, Haghdoost AA, Taghizadeh Z. Community-based physical activity interventions among women: a systematic review. *BMJ Open*. 2015;5(4):e007210. doi:10.1136/bmjopen-2014-007210.			X		
An JY, Hayman LL, Park YS, Dusaj TK, Ayres CG. Web-based weight management programs for children and adolescents: a systematic review of randomized controlled trial studies. *Adv Nurs Sci.* 2009;32(3):222-240. doi:10.1097/ANS.0b013e3181b0d6ef.	X				
Anderson LM, Quinn TA, Glanz K, et al. The effectiveness of worksite nutrition and physical activity interventions for controlling employee overweight and obesity: a systematic review. *Am J Prev Med.* 2009;37(4):340-357. doi:10.1016/j.amepre.2009.07.003.	X				
Appelhans BM, Moss OA, Cerwinske LA. Systematic review of paediatric weight management interventions delivered in the home setting. *Obes Rev*. 2016;17(10):977-988. doi:10.1111/obr.12427.	X				
Arango CM, Paez DC, Reis RS, Brownson RC, Parra DC. Association between the perceived environment and physical activity among adults in Latin America: a systematic review. *Int J Behav Nutr Phys Act*. 2013;10(122):1479-5868. doi:10.1186/1479-5868-10-122.			X		
Arbesman M, Mosley LJ. Systematic review of occupation- and activity-based health management and maintenance interventions for community-dwelling older adults. *Am J Occup Ther*. 2012;66(3):277-283. doi:10.5014/ajot.2012.003327.				X	
Ashford S, Edmunds J, French DP. What is the best way to change self-efficacy to promote lifestyle and recreational physical activity? A systematic review with meta-analysis. *Br J Health Psycho*l.					X

Citation	Outcome	Study Design	Exposure	Not ideal fit for replacement of de novo search	Other
2010;15(Pt 2):265-288. doi:10.1348/135910709X461752.					
Ashworth NL, Chad KE, Harrison EL, Reeder BA, Marshall SC. Home versus center based physical activity programs in older adults. *Cochrane Database Syst Rev.* 2005;25(1):CD004017. doi:10.1002/14651858.CD004017.pub2.	X				
Avery L, Flynn D, van Wersch A, Sniehotta FF, Trenell MI. Changing physical activity behavior in type 2 diabetes: a systematic review and meta-analysis of behavioral interventions. *Diabetes Care*. 2012;35(12):2681-2689. doi:10.2337/dc11-2452.			X		
Bancroft C, Joshi S, Rundle A, et al. Association of proximity and density of parks and objectively measured physical activity in the United States: a systematic review. *Soc Sci Med*. 2015;138:2230. doi:10.1016/j.socscimed.2015.05.034.			X		
Barbosa Filho VC, Minatto G, Mota J, Silva KS, de Campos W, Lopes Ada S. Promoting physical activity for children and adolescents in low- and middle-income countries: an umbrella systematic review: a review on promoting physical activity in LMIC. *Prev Med*. 2016;88:115-126. doi:10.1016/j.ypmed.2016.03.025.				X	
Barte JC, Wendel-Vos GC. A systematic review of financial incentives for physical activity: the effects on physical activity and related outcomes. *Behav Med*. 2015;1-12. doi:10.1002/14651858.CD008366.pub2.			X		
Batsis JA, Gill LE, Masutani, RK, et al. Weight loss interventions in older adults with obesity: a systematic review of randomized controlled trials since 2005. *J Am Geriatr Soc.* 2017;65(2):257-268. doi:10.1111/jgs.14514.	X				
Bautista-Castana I, Doreste J, Serra-Majem L. Effectiveness of interventions in the prevention of childhood obesity. *Eur J Epidemiol.* 2004;19(7):617-622.		X			
Baxter S, Blank L, Johnson M, et al. Interventions to promote or maintain physical activity during and after the transition to retirement: an evidence synthesis. *Public Health Research.* April 2016.			X		
Baxter S, Johnson M, Payne N, et al. E. Promoting and maintaining physical activity in the transition to retirement: a systematic review of interventions for adults around retirement age. *Int J Behav Nutr Phys Act*. 2016;13(1):12. doi:10.1186/s12966-016-0336-3.				X	
Beets MW, Beighle A, Erwin HE, Huberty JL. After-school program impact on physical activity and fitness. A meta-analysis. *Am J Prev Med*. 2009;36(6):527-537. doi:10.1016/j.amepre.2009.01.033.					X

Citation	Outcome	Study Design	Exposure	Not ideal fit for replacement of de novo search	Other
Belanger-Gravel A, Godin G, Vezina-Im LA, Amireault S, Poirier P. The effect of theory-based interventions on physical activity participation among overweight/obese individuals: a systematic review. *Obes Rev*. 2011;12(6):430-439. doi:10.1111/j.1467-789X.2010.00729.x.				X	
Bellew B, Schoeppe S, Bull FC, Bauman A. The rise and fall of Australian physical activity policy 1996-2006: a national review framed in an international context. *Aust New Zealand Health Policy*. 2008;5:18. doi:10.1186/1743-8462-5-18.		X			
Bender MS, Choi J, Won GY, Fukuoka Y. Randomized controlled trial lifestyle interventions for Asian Americans: a systematic review. *Prev Med*. 2014;67:171-181. doi:10.1016/j.ypmed.2014.07.034.				X	
Benton JS, Anderson J, Hunter RF, French DP. The effect of changing the built environment on physical activity: a quantitative review of the risk of bias in natural experiments. *Int J Behav Nutr Phys Act*. 2016;13(1):107. doi:10.1186/s12966-016-0433-3.	X				
Berg MH, Schoones JW, Vliet Vlieland TP. Internet-based physical activity interventions: a systematic review of the literature. *J Med Internet Res*.2007;9(3). doi:10.2196/jmir.9.3.e26.					X
Berge JM, Everts JC. Family-based interventions targeting childhood obesity: a meta-analysis. *Child Obes*. 2011;7(2):110-121. doi:10.1089/chi.2011.07.02.1004.				X	
Berry D, Sheehan R, Heschel R, Knafl K, Melkus G, Grey M. Family-based interventions for childhood obesity: a review. *J Fam Nurs*. 2004;10(4):429-449. doi:10.1177/1074840704269848.		X			
Best KL, Miller WC, Eng JJ, Routhier F. Systematic review and meta-analysis of peer-led self-management programs for increasing physical activity. *Int J Behav Med*. 2016;23(5):527-538. doi:10.1007/s12529-016-9540-4.			X		
Bhuyan S, Chandak A, Smith P, Carlton C, Duncan K, Gentry D. Integration of public health and primary care: a systematic review of the current literature in primary care physician mediated childhood obesity interventions. *Obes Res Clin Pract.* 2015;9(6):539-552. doi:10.1016/j. orcp.2015.07.005.			X		
Biddle SJ, O'Connell S, Braithwaite RE. Sedentary behaviour interventions in young people: a meta-analysis. *Br J Sports Med*. 2011;45(11):937-942. doi:10.1136/bjsports-2011-090205.			X		
Bird EL, Baker G, Mutrie N, Ogilvie D, Sahlqvist S, Powell J. Behavior change techniques used to promote walking and cycling: a systematic review. *Health Psychol*. 2013;32(8):829-838. doi:10.1037/a0032078.			X		

Citation	Outcome	Study Design	Exposure	Not ideal fit for replacement of de novo search	Other
Blackman KC, Zoellner J, Berrey LM, et al. Assessing the internal and external validity of mobile health physical activity promotion interventions: a systematic literature review using the RE-AIM framework. *J Med Internet Res.* 2013;15(10):e224. doi:10.2196/jmir.2745.			X		
Bloss CS, Madlensky L, Schork NJ, Topol EJ. Genomic information as a behavioral health intervention: can it work? *Per Med*. 2011;8(6):659-667. doi:10.2217/pme.11.73.		X			
Blue CL, Black DR. Synthesis of intervention research to modify physical activity and dietary behaviour. *Res Theory Nurs Pract*. 2005;19(1):25-61.		X			
Bock C, Jarczok MN, Litaker D. Community-based efforts to promote physical activity: a systematic review of interventions considering mode of delivery, study quality and population subgroups. *J Sci Med Sport*. 2014;17(3):276-282. doi:10.1016/j.jsams.2013.04.009.			X		
Bodde AE, Seo DC. A review of social and environmental barriers to physical activity for adults with intellectual disabilities. *Disabil Health J*. 2009;2(2):57-66. doi:10.1016/j.dhjo.2008.11.004.					X
Bonell C, Jamal F, Harden A, et al. Systematic review of the effects of schools and school environment interventions on health: evidence mapping and synthesis. *Public Health Research*. 2013. doi:10.3310/phr01010.			X		
Bonell C, Wells H, Harden A, et al. The effects on student health of interventions modifying the school environment: systematic review. *J Epidemiol Community Health.* 2013;67(8):677-681 doi:10.1136/jech-2012-202247.				X	
Bort-Roig J, Gilson ND, Puig-Ribera A, Contreras RS, Trost SG. Measuring and influencing physical activity with smartphone technology: a systematic review. *Sports Med*. 2014;44(5):671-686. doi:10.1007/s40279-014-0142-5.			X		
Bossen D, Veenhof C, Dekker J, Bakker D. The effectiveness of self-guided web-based physical activity interventions among patients with a chronic disease: a systematic review. *J Phys Act Health.* 2014;11(3):665-677. doi:10.1123/jpah.2012-0152.			X		
Bourdeaudhuij I, Cauwenberghe E, Spittaels H, et al. School-based interventions promoting both physical activity and healthy eating in Europe: a systematic review within the HOPE project. *Obes Rev*. 2011;12(3):205-216. doi:10.1111/j.1467-789X.2009.00711.x.				X	

Citation	Outcome	Study Design	Exposure	Not ideal fit for replacement of de novo search	Other
Bourke L, Homer KE, Thaha MA, et al. Interventions to improve exercise behaviour in sedentary people living with and beyond cancer: a systematic review. *Br J Cancer*. 2014;110(4):831-841. doi:10.1038/bjc.2013.750.	X				
Bourke L, Homer KE, Thaha MA, et al. Interventions for promoting habitual exercise in people living with and beyond cancer. *Cochrane Database Syst Rev.* Sept 2013;(9):CD010192. doi:10.1002/14651858.CD010192.pub2.					X
Bradshaw T, Lovell K, Harris N. Healthy living interventions and schizophrenia: a systematic review. *J Adv Nurs*. 2005;49(6):634-654. doi:10.1111/j.1365-2648.2004.03338.x.	X				
Brannon EE, Cushing CC. Is there an app for that? Translational science of pediatric behavior change for physical activity and dietary interventions: a systematic review. *J Pediatr Psychol.* 2015;40(4):373-384. doi:10.1093/jpepsy/jsu108.			X		
Brauer P, Royall D, O'Young O, et al. Key features of effective structured behavioural programs in primary care: what are they? *Can J Diet Pract Res*. 2015;76(3):e12-3.		X			
Breitenstein SM, Gross D, Christophersen R. Digital delivery methods of parenting training interventions: a systematic review. *Worldviews Evid Based Nurs.* 2014;11(3):168-176. doi:10.1111/wvn.12040.	X				
Brinkley A, McDermott H, Munir F. What benefits does team sport hold for the workplace? a systematic review. *J Sports Sci.* 2017;35(2):136-148. doi:10.1080/02640414.2016.1158852.	X				
Brown EC, Buchan DS, Baker JS, Wyatt FB, Bocalini DS, Kilgore L. A systematised review of primary school whole class child obesity interventions: effectiveness, characteristics, and strategies. *Biomed Res Int.* 2016;2016:4902714. doi:10.1155/2016/4902714.	X				
Brown HE, Atkin AJ, Panter J, Wong G, Chinapaw MJ, van Sluijs EM. Family-based interventions to increase physical activity in children: a systematic review, meta-analysis and realist synthesis. *Obes Rev.* 2016;17(4):345-360. doi:10.1111/obr.12362.			X		
Brown T, Avenell A, Edmunds LD, et al. Systematic review of long-term lifestyle interventions to prevent weight gain and morbidity in adults. *Obes Rev*. 2009;10(6):627-638. doi:10.1111/j.1467-789X.2009.00641.x.	X				

Citation	Outcome	Study Design	Exposure	Not ideal fit for replacement of de novo search	Other
Brown T, Summerbell C. Systematic review of school-based interventions that focus on changing dietary intake and physical activity levels to prevent childhood obesity: an update to the obesity guidance produced by the National Institute for Health and Clinical Excellence. *Obes Rev*. 2009;10(1):110-141. doi:10.1111/j.1467-789X.2008.00515.x.					X
Buchholz SW, Wilbur J, Ingram D, Fogg L. Physical activity text messaging interventions in adults: a systematic review. *Worldviews Evid Based Nurs*. 2013;10(3):163-173. doi:10.1111/wvn.12002.			X		
Bull ER, Dombrowski SU, McCleary N, Johnston M. Are interventions for low-income groups effective in changing healthy eating, physical activity and smoking behaviours? A systematic review and meta-analysis. *BMJ Open.* 2014;4(11)e006046. doi:10.1136/bmjopen-2014-006046.			X		
Cai, X, Qiu SH, Yin H, et al. Pedometer intervention and weight loss in overweight and obese adults with type 2 diabetes: a meta-analysis. *Diabet Med.* 2016;33(8):1035-1044. doi:10.1111/dme.13104.	X				
Cai Y, Richards EA. Systematic review of physical activity outcomes of rural lifestyle interventions. *West J Nurs Res.* 2016;38(7):909-927. doi:10.1177/0193945915625922.			X		
Cairns JM, Bambra C, Hillier-Brown FC, Moore HJ, Summerbell CD. Weighing up the evidence: a systematic review of the effectiveness of workplace interventions to tackle socio-economic inequalities in obesity. *J Public Health (Oxf)*. 2015;37(4):659-670. doi:10.1093/pubmed/fdu077.	X				
Calogiuri G, Chroni S. The impact of the natural environment on the promotion of active living: an integrative systematic review. *BMC Public Health*. Aug 2014;14:873. doi:10.1186/1471-2458-14-873.			X		
Cardona-Morrell M, Rychetnik L, Morrell SL, Espinel PT, Bauman A. Reduction of diabetes risk in routine clinical practice: are physical activity and nutrition interventions feasible and are the outcomes from reference trials replicable? A systematic review and meta-analysis . *BMC Public Health.* Oct 2010;10:653. doi:10.1186/1471-2458-10-653.			X		
Carroll JK, Yancey AK, Spring B, et al. What are successful recruitment and retention strategies for underserved populations? Examining physical activity interventions in primary care and community settings. *Transl Behav Med.* 2011;1(2):234-251. doi:10.1007/s13142-011-0034-2.				X	

Citation	Outcome	Study Design	Exposure	Not ideal fit for replacement of de novo search	Other
Carvalho de Menezes M, Bedeschi LB, Santos LC, Lopes AC. Interventions directed at eating habits and physical activity using the Transtheoretical Model: a systematic review. *Nutr Hosp.* 2016;33(5):586. doi:10.20960/nh.586.				X	
Centers for Disease Control and Prevention. *School health guidelines to promote healthy eating and physical activity.* Sept 2011;60(RR05):1-71.				X	
Cerin E, Nathan A, van Cauwenberg J, Barnett DW. The neighbourhood physical environment and active travel in older adults: a systematic review and meta-analysis. *Int J Behav Nutr Phys Act.* 2017;14:15. doi:10.1186/s12966-017-0471-5.			X		
Chambers, D, Booth A, Baxter SK, Johnson M, Dickinson KC, Goyder EC. Evidence for models of diagnostic service provision in the community: literature mapping exercise and focused rapid reviews. *HS&DR*. Dec 2016.			X		
Chaplais E, Naughton G, Thivel D, Courteix D, Greene D. Smartphone interventions for weight treatment and behavioral change in pediatric obesity: a systematic review. *Telemed J E Health.* 2015;21(10):822-830. doi:10.1089/tmj.2014.0197.	X				
Chau JY, Ploeg HP, Uffelen JG, et al. Are workplace interventions to reduce sitting effective? A systematic review. *Preve Med*. 2010;51(5):352-356. doi:10.1016/j.ypmed.2010.08.012.			X		
Chaudhry ZW, Brown RV, Fawole OA, et al. Comparative effectiveness of strategies to prevent weight gain among women with and at risk for breast cancer: a systematic review. *Springerplus*. 2013;2(1):277. doi:10.1186/2193-1801-2-277.	X				
Chen JL, Wilkosz ME. Efficacy of technology-based interventions for obesity prevention in adolescents: a systematic review. *Adolesc Health Med Ther*. 2014;5:159-170. doi:10.2147/AHMT.S39969.				X	
Cheok G, Tan D, Low A, Hewitt J. Is Nintendo Wii an effective intervention for individuals with stroke? A systematic review and meta-analysis. *J Am Med Dir Assoc.* 2015;16(11):923-932. doi:10.1016/j.jamda.2015.06.010.	X				
Chu AH, Ng SH, Tan CS, Win AM, Koh D, Muller-Riemenschneider F. A systematic review and meta-analysis of workplace intervention strategies to reduce sedentary time in white-collar workers. *Obes Rev*. 2016;17(5):467-481. doi:10.1111/obr.12388.			X		

Citation	Outcome	Study Design	Exposure	Not ideal fit for replacement of de novo search	Other
Claes J, Buys R, Budts W, Smart N, Cornelissen VA. Longer-term effects of home-based exercise interventions on exercise capacity and physical activity in coronary artery disease patients: a systematic review and meta-analysis. *Eur J Prev Cardiol*. 2017;24(3):244-256. doi:10.1177/2047487316675823.			X		
Clark AM, McAlister FA, Hartling L, Vandermeer B. *Randomized trials of secondary prevention programs in coronary artery disease: a systematic review*. AHRQ Technology Assessments. Rockville, MD: Agency for Healthcare Research and Quality; Dec 2005.				X	
Clark IN, Taylor NF, Baker F. Music interventions and physical activity in older adults: a systematic literature review and meta-analysis. *J Rehabil Med*. 2012;44(9):710-719. doi:10.2340/16501977-1025.				X	
Cohen DA, McKenzie TL, Sehgal A, Williamson S, Golinelli D, Lurie N. Contribution of public parks to physical activity. *Am J Public Health.* 2007;97(3):509-514. doi:10.2105/AJPH.2005.072447.					X
Colquitt JL, Loveman E, O'Malley C, et al. Diet, physical activity, and behavioural interventions for the treatment of overweight or obesity in preschool children up to the age of 6 years. *Cochrane Database Syst Rev*. March 2016;(3). doi:10.1002/14651858.CD012105.	X				
Commissaris DA, Huysmans MA, Mathiassen SE, Srinivasan D, Koppes LLj, Hendriksen IJ. Interventions to reduce sedentary behavior and increase physical activity during productive work: a systematic review. *Scand J Work Environ Health*. 2016;42(3):181-191. doi:10.5271/sjweh.3544.			X		
Conn VS, Hafdahl AR, Cooper PS, Brown LM, Lusk SL. Meta-analysis of workplace physical activity interventions. *Am J Prev Med.* 2009;37(4):330-339. doi:10.1016/j.amepre.2009.06.008.					X
Conn VS, Hafdahl AR, Mehr DR. Interventions to increase physical activity among healthy adults: meta-analysis of outcomes. *Am J Public Health.* 2011;101(4):751-758. doi:10.2105/AJPH.2010.194381.			X		
Conn VS, Isaramalai S, Banks-Wallace J, Ulbrich S, Cochran J. Evidence-based interventions to increase physical activity among older adults. *Act Adapt Aging*. 2002;27(2):39-52. doi:10.1300/J016v27n02 04.		X			
Conn VS, Minor MA, Burks KJ, Rantz MJ, Pomeroy SH. Integrative review of physical activity intervention research with aging adults. *J Am Geriatr Soc.* 2003;51(8):1159-1168.					X

Citation	Outcome	Study Design	Exposure	Not ideal fit for replacement of de novo search	Other
Conn VS, Valentine JC, Cooper HM. Interventions to increase physical activity among aging adults: a meta-analysis. *Ann Behav Med.* 2002;24(3):190-200.					X
Connelly J, Kirk A, Masthoff J, Macrury S. The use of technology to promote physical activity in type 2 diabetes management: a systematic review. *Diabetic Med.* 2013;30(12):1420-1432.			X		
Corona E, Flores YN, Arab L. Trends in evidence-based lifestyle interventions directed at obese and overweight adult Latinos in the US: a systematic review of the literature. *J Community Health*. 2016;41(3):667-673. doi:10.1007/s10900-015-0119-9.	X				
Coughlin SS, Smith SA. A review of community-based participatory research studies to promote physical activity among African Americans. *J Ga Public Health Assoc.* 2016;5(3):220-227.			X		
Cox NS, Alison JA, Holland AE. Interventions for promoting physical activity in people with cystic fibrosis. *Cochrane Database Syst Rev*. 2013;(12):Cd009448. doi:10.1002/14651858.CD009448.pub2.				X	
Cradock AL, Barrett JL, Kenney EL, et al. Using cost-effectiveness analysis to prioritize policy and programmatic approaches to physical activity promotion and obesity prevention in childhood. *Prev Med.* 2017;95(suppl):S17-S27. doi:10.1016/j.ypmed.2016.10.017.		X			
Cugelman B, Thelwall M, Dawes P. Online interventions for social marketing health behavior change campaigns: a meta-analysis of psychological architectures and adherence factors. *J Med Internet Res.* 2011;13(1):e17. doi:10.2196/jmir.1367.				X	
Cushing CC, Brannon EE, Suorsa KI, Wilson DK. Systematic review and meta-analysis of health promotion interventions for children and adolescents using an ecological framework. *J Pediatr Psychol.* 2014;8(39):949-962. doi:10.1093/jpepsy/jsu042.			X		
Dallery J, Kurti A, Erb P. A new frontier: integrating behavioral and digital technology to promote health behavior. *Behav Anal.* 2015;38(1):1949. doi:10.1007/s40614-014-0017-y.		X			
Davies CA, Spence JC, Vandelanotte C, Caperchione CM, Mummery WK. Meta-analysis of internet-delivered interventions to increase physical activity levels. *Int J Behav Nutr Phys Act.* 2012;9:52. doi:10.1186/1479-5868-9-52.			X		
De Meester, F, van Lenthe FJ, Spittaels H, Lien N, De Bourdeaudhuij I. Interventions for promoting physical activity among European teenagers: a					X

Citation	Outcome	Study Design	Exposure	Not ideal fit for replacement of de novo search	Other
systematic review. *Int J Behav Nutr Phys Act.* 2009;6:82. doi:10.1186/1479-5868-6-82.					
de Vries HJ, Kooiman TJ, van Ittersum MW, van Brussel M, de Groot M. Do activity monitors increase physical activity in adults with overweight or obesity? A systematic review and meta-analysis. *Obesity (Silver Spring).* 2016;24(10):2078-2091. doi:10.1002/oby.21619.			X		
DeMattia L, Lemont L, Meurer L. Do interventions to limit sedentary behaviours change behaviour and reduce childhood obesity: a critical review of the literature. *Obes Rev*. 2007;8(1):69-81. doi:10.1111/j.1467-789X.2006.00259.x.		X			
Dennett R, Coulter E, Paul L, Freeman J. Effectiveness and user experience of web-based interventions for increasing physical activity in people with multiple sclerosis: a comprehensive systematic review protocol. *JBI Database System Rev Implement Rep.* 2016;14(11):50-62. doi:10.11124/JBISRIR-2016-003174.		X			
DeSmet A, Thompson D, Baranowski T, Palmeira A, Verloigne M, De Bourdeaudhuij I. Is participatory design associated with the effectiveness of serious digital games for healthy lifestyle promotion? A meta-analysis. *J Med Internet Res.* 2016;18(4):e94. doi:10.2196/jmir.4444.	X				
DeSmet A, Van Ryckeghem D, Compernolle S, et al. A meta-analysis of serious digital games for healthy lifestyle promotion. *Prev Med*. 2014;69:95-107. doi:10.1016/j.ypmed.2014.08.026.	X				
Direito A, Carraca E, Rawstorn J, Whittaker R, Maddison R. mHealth technologies to influence physical activity and sedentary behaviors: behavior change techniques, systematic review and meta-analysis of randomized controlled trials. *Ann Behav Med.* 2016;51(2):226-239. doi:10.1007/s12160-016-9846-0.			X		
Dobbins M, Lockett D, Michel I, et al. *The effectiveness of school-based interventions in promoting physical activity and fitness among children and youth: a systematic review (Report)*. Hamilton, ON: Effective Public Health Practice Project; 2001.			X		
Dobbins M, Husson H, DeCorby K, LaRocca RL. School-based physical activity programs for promoting physical activity and fitness in children and adolescents aged 6 to 18. *Cochrane Database Syst Rev.* 2013;(2):CD00765. doi:10.1002/14651858.CD007651.pub2.			X		

Citation	Outcome	Study Design	Exposure	Not ideal fit for replacement of de novo search	Other
Dodd JM, Grivell RM, Crowther CA, Robinson JS. Antenatal interventions for overweight or obese pregnant women: a systematic review of randomised trial. *BJOG*. 2010;117(11):1316-1326. doi:10.1111/j.1471-0528.2010.02540.x.	X				
Donath L, Rossler R, Faude O. Effects of virtual reality training (exergaming) compared to alternative exercise training and passive control on standing balance and functional mobility in healthy community-dwelling seniors: a meta-analytical review. *Sports Med.* 2016;46(9):1293-1309. doi:1.1007/s40279-016-0485-1.	X				
Duan-Porter W, Goldstein, K, McDuffie J, et al. *Mapping the evidence: sex effects in high-impact conditions for women veterans - depression, diabetes, and chronic pain.* VA Evidence-based Synthesis Program Reports. Washington, DC: Department of Veterans Affairs; Sept 2015.	X				
Dudley D, Okely A, Pearson P, Cotton W. A systematic review of the effectiveness of physical education and school sport interventions targeting physical activity, movement skills and enjoyment of physical activity. *Eur Phys Educ Rev.* 2011;17(3):353-378. doi:10.1177/1356336X11416734.				X	
Dugdill L, Graham RC, McNair F. Exercise referral: the public health panacea for physical activity promotion? A critical perspective of exercise referral schemes; their development and evaluation. *Ergonomics.* 2005;48(11-14):1390-1410. doi:10.1080/00140130500101544.		X			
Eakin EG, Lawler SP, Vandelanotte C, Owen N. Telephone interventions for physical activity and dietary behavior change: a systematic review. *Am J Prev Med*. 2007;32(5):419-434. doi:10.1016/j.amepre.2007.01.004.					X
Eisner D, Zoller M, Rosemann T, Huber CA, Badertscher N, Tandjung R. Screening and prevention in Swiss primary care: a systematic review. *Int J Gen Med.* 2011;4:853-870.	X				
Engbers LH, Poppel MN, Chin A, Paw MJ, Mechelen W. Worksite health promotion programs with environmental changes: a systematic review. *Am J Prev Med.* 2005;29(1):61-70. doi:10.1016/j.amepre.2005.03.001.			X		
Erwin HE, Ickes M, Ahn S, Fedewa A. Impact of recess interventions on children. *Am J Health Promot.* 2014;28(3):159-167. doi:10.4278/ajhp.120926-LIT-470.		X			
Everson-Hock ES, Johnson M, Jones R, et al. Community-based dietary and physical activity interventions in low socioeconomic groups in the UK: a mixed methods systematic review. *Prev*				X	

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Med. 2013;56(5):265-272. doi:10.1016/j.ypmed.2013.02.023.					
Fanning J, Mullen SP, McAuley E. Increasing physical activity with mobile devices: a meta-analysis. *J Med Internet Res.* 2012;14(6):e161. doi:10.2196/jmir.2171.			X		
Farrance C, Tsofliou F, Clark C. Adherence to community based group exercise interventions for older people: A mixed-methods systematic review. *Prev Med.* 2016;87:155-166. doi:10.1016/j.ypmed.2016.02.037.				X	
Fedewa MV, Hathaway ED, Williams TD, Schmidt MD. Effect of exercise training on non-exercise physical activity: a systematic review and meta-analysis of randomized controlled trials. *Sports Med.* 2017;47(6):1171-1182. doi:10.1007/s40279-016-0649-z.			X		
Fisher E, Griffin K. *Interventions for healthy eating and active urban living: a guide for improving community health*. New York Academy of Medicine. New York, NY: NYC Department of Health and Mental Hygiene; 2016.				X	
Fisher JD, Freeman K, Clarke A, et al. *Patient safety in ambulance services: a scoping review*. Health Services and Delivery Research, No. 3.21. Southhampton, UK: NIHR Journals Libray; May 2015. doi:10.3310/hsdr03210.			X		
Fleischhacker S, Roberts E, Camplain R, Evenson KR, Gittelsohn J. Promoting physical activity among Native American youth: a systematic review of the methodology and current evidence of physical activity interventions and community-wide initiatives. J Racial Ethn Health Disparities. 2016;3(4):608–624. doi:10.1007/s40615-015-0180-1.				X	
Fleming P, Godwin M. Lifestyle interventions in primary care: systematic review of randomized controlled trials. *Can Fam Physician*. 2008;54(12):1706-1713.	X				
Flodmark CE, Marcus C, Britton M. Interventions to prevent obesity in children and adolescents: a systematic literature review. *Int J Obes (Lond)*. 2006;30(4):579-589. doi:10.1038/sj.ijo.0803290.	X				
Floyd A, Moyer A. Group vs. individual exercise interventions for women with breast cancer: a meta-analysis. *Health Psychol Rev.* 2009;4(1):22-41. doi:10.1080/17437190903384291.	X				
Foster C, Hillsdon M, Cavill N. Interventions that use the environment to encourage physical activity: evidence review. *BMJ Open.* 2007;334:1204. doi:10.1136/bmj.39198.722720.BE.					X

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Foster C, Hillsdon M. Changing the environment to promote health-enhancing physical activity. *J Sports Sci.* 2004;22(8):755-769. doi:10.1080/02640410410001712458.					X
Foster C, Richards J, Thorogood M, Hillsdon M. Remote and web 2.0 interventions for promoting physical activity. *Cochrane Database Syst Rev*. 2013;(9). doi:10.1002/14651858.CD010395.pub2.			X		
Franz MJ, Boucher JL, Rutten-Ramos S, VanWormer JJ. Lifestyle weight-loss intervention outcomes in overweight and obese adults with type 2 diabetes: a systematic review and meta-analysis of randomized clinical trials. *J Acad Nutr Diet.* 2015;115(9):1447-1463. doi:10.1016/j.jand.2015.02.031.	X				
Franz MJ. Effectiveness of weight loss and maintenance interventions in women. *Curr Diab Rep.* 2004;4(5):387-393. doi:10.1007/s11892-004-0042-4.	X				
Fraser SD, Lock K. Cycling for transport and public health: a systematic review of the effect of the environment on cycling. *Eur J Public Health*. 2011;21(6):738-43. doi:10.1093/eurpub/ckq145.			X		
Free C, Phillips G, Felix L, Galli L, Patel V, Edwards P. The effectiveness of M-health technologies for improving health and health services: a systematic review protocol. *BMC Res Notes.* 2010;3:250. doi:10.1186/1756-0500-3-250.		X			
French DP, Olander EK, Chisholm A, Mc Sharry J. Which behaviour change techniques are most effective at increasing older adults' self-efficacy and physical activity behaviour? A systematic review. *Ann Behav Med.* 2014;48(2):225-234. doi:10.1007/s12160-014-9593-z.			X		
Frerichs L, Ataga O, Corbie-Smith G, Tessler Lindau S. Child and youth participatory interventions for addressing lifestyle-related childhood obesity: a systematic review. *Obes Rev.* 2016;17(12):1276-1286. doi:10.1111/obr.12468.			X		
Friedrich RR, Polet JP, Schuch I, Wagner MB. Effect of intervention programs in schools to reduce screen time: a meta-analysis. *DARE.* 2014;(2):232-241. doi:10.1016/j.jped.2014.01.003.			X		
Fry JP, Neff RA. Periodic prompts and reminders in health promotion and health behavior interventions: systematic review. *J Med Internet Res.* 2009;11(2):e16. doi:10.2196/jmir.1138.					X
Funk M, Taylor EL. Pedometer-based walking interventions for free-living adults with type 2 diabetes: a systematic review. *Curr Diabetes Rev.* 2013:9(6):462-471. doi:10.2174/15733998113096660084.			X		

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Galaviz KI, Harden SM, Smith E. Physical activity promotion in Latin American populations: a systematic review on issues of internal and external validity. *Int J Behav Nutr Phys Act.* 2014;11:77. doi:10.1186/1479-5868-11-77.	X				
Galdas P, Darwin Z, Fell J, et al. A systematic review and metaethnography to identify how effective, cost-effective, accessible and acceptable self-management support interventions are for men with long-term conditions (SELF-MAN). *Health Serv Deliv Res.* 2015;3(34). doi:10.3310/hsdr03340.	X				
Gandhi S, Chen S, Hong L, et al. Effect of mobile health interventions on the secondary prevention of cardiovascular disease: systematic review and meta-analysis. *Can J Cardiol.* 2017;33(2):219-231. doi:10.1016/j.cjca.2016.08.017.	X				
Gardner B, Smith L, Lorencatto F, Hamer M, Biddle SJ. How to reduce sitting time? A review of behaviour change strategies used in sedentary behaviour reduction interventions among adults. *Health Psychol Rev*. 2016;10(1):89-112. doi:10.1080/17437199.2015.1082146.		X			
Gebruers N, Vanroy C, Truijen S, Engelborghs S, De Deyn PP. Monitoring of physical activity after stroke: a systematic review of accelerometry-based measures. *Arch Phys Med Rehabil.* 2010;91(2):288-297. doi:10.1016/j.apmr.2009.10.025.	X				
George ES, Kolt GS, Duncan MJ, et al. A review of the effectiveness of physical activity interventions for adult males. *Sports Med*. 2012;42(4):281-300. doi:10.2165/11597220-000000000-00000.			X		
Geraedts H, Zijlstra A, Bulstra SK, Stevens M, Zijlstra W. Effects of remote feedback in home-based physical activity interventions for older adults: a systematic review. *Patient Educ Couns.* 2013;91(1):14-24. doi:10.1016/j.pec.2012.10.018.				X	
German Federal Ministry of Health. *National Recommendations for Physical Activity and Physical Activity Promotion*. Erlangen, Ger: FAU University Press; 2016.				X	
Gibbons MM, Maher AR, Dawes AJ, et al. *Mental health assessment and psychosocial interventions for bariatric surgery.* VA Evidence-based Synthesis Program Reports. Washington, DC: Department of Veterans Affairs; Oct 2014.		X			
Gierisch JM, Beadles C, Shapiro A, et al. *Health disparities in quality indicators of healthcare among adults with mental illness*. VA Evidence-based Synthesis Program Reports. Washington, DC: Department of Veterans Affairs; Oct 2014.	X		X		

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Gierisch JM, Goode AP, Batch BC, et al. *The impact of wearable motion sensing technologies on physical activity: systematic review*. VA Evidence-based Synthesis Program Reports. Washington, DC: Department of Veterans Affairs; 2015.				X	
Gilinsky AS, Dale H, Robinson C, Hughes AR, McInnes R, Lavallee D. Efficacy of physical activity interventions in post-natal populations: systematic review, meta-analysis and content coding of behaviour change techniques. *Health Psychol Rev.* 2015;9(2):244-263. doi:10.1080/17437199.2014.899059.			X		
Gilmartin J, Murphy M. The effects of contemporary behavioural weight loss maintenance interventions for long term weight loss: a systematic review. *J Res Nurs.* 2015;20(6):481-496. doi:10.1177/1744987115599671.	X				
Goh YY, Bogart LM, Sipple-Asher BK, et al. Using community-based participatory research to identify potential interventions to overcome barriers to adolescents' healthy eating and physical activity. *J Behav Med.* 2009;32(5):491-502. doi:10.1007/s10865-009-9220-9.			X		
Goode AD, Reeves MM, Eakin EG. Telephone-delivered interventions for physical activity and dietary behavior change: an updated systematic review. *Am J Prev Med*. 2012;42(1):81-88. doi:10.1016/j.amepre.2011.08.025.			X		
Goode AP, Hall KS, Batch BC, et al. The impact of interventions that integrate accelerometers on physical activity and weight loss: a systematic review. *Ann Behav Med.* 2017;51(1):79-93. doi:10.1007/s12160-016-9829-1.			X		
Gorga E, Regazzoni V, Bansilal S. School and family-based interventions for promoting a healthy lifestyle among children and adolescents in Italy: a systematic review. *J Cardiovasc Med (Hagerstown)*. 2016;17(8):547-555. doi:10.1016/j.jand.2015.02.031.			X		
Gourlan M, Bernard P, Bortholon C, et al. Efficacy of theory-based interventions to promote physical activity. A meta-analysis of randomised controlled trials. *Health Psychol Rev*. 2016;10(1):50-66. doi:10.1080/17437199.2014.981777.			X		
Gourlan MJ, Trouilloud DO, Sarrazin PG. Interventions promoting physical activity among obese populations: a meta-analysis considering global effect, long-term maintenance, physical activity indicators and dose characteristics. *Obes Rev.* 2011;12(7):e633-e645. doi:10.1111/j.1467-789X.2011.00874.x.					X

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Grieken A, Ezendam NP, Paulis WD, Wouden JC, Raat H. Primary prevention of overweight in children and adolescents: a meta-analysis of the effectiveness of interventions aiming to decrease sedentary behaviour. *Int J Behav Nutr Phys Act*. 2012;9(2):61. doi:10.1186/1479-5868-9-61.			X		
Gudzune K, Hutfless S, Maruthur N, Wilson R, Segal J. Strategies to prevent weight gain in workplace and college settings: a systematic review. *Prev Med.* 2013;57(4):268-277. doi:10.1016/j.ypmed.2013.03.004.	X				
Guerra PH, Nobre MR, da Silveira JA, Taddei JA. School-based physical activity and nutritional education interventions on body mass index: a meta-analysis of randomised community trials? Project PANE. *Prev Med.* 2014;61:81-89. doi:10.1016/j.ypmed.2014.01.005.	X				
Guirguis-Blake JM, Senger CA, Webber EM, Mularski R, Whitlock EP. *Screening for chronic obstructive pulmonary disease: a Systematic Evidence Review for the US Preventive Services Task Force.* Rockville, MD: Agency for Healthcare Research and Quality; April 2016.	X				
Halcomb E, Moujalli S, Griffiths R, Davidson P. Effectiveness of general practice nurse interventions in cardiac risk factor reduction among adults. *JBI Libr Syst Rev.* 2007;5(7):407-453.					X
Hale DR, Fitzgerald-Yau N, Viner RM. A systematic review of effective interventions for reducing multiple health risk behaviors in adolescence. *Am J Public Health.* 2014;104(5):e19-e41. doi:10.2105/AJPH.2014.301874.	X				
Hall AK, Cole-Lewis H, Bernhardt JM. Mobile text messaging for health: a systematic review of reviews. *Annu Rev Public Health.* 2015;36:393-415. doi:10.1146/annurev-publhealth-031914-122855.				X	
Hammersley ML, Jones RA, Okely AD. Parent-focused childhood and adolescent overweight and obesity eHealth interventions: a systematic review and meta-analysis. *J Med Internet Res.* 2016;18(7):e203. doi:10.2196/jmir.5893.	X				
Harris J, Springett J, Croot L, et al. Can community-based peer support promote health literacy and reduce inequalities? A realist review. *Public Health Research*. Feb 2015.	X				
Harris KC, Kuramoto LK, Schulzer M, Retallack JE. Effect of school-based physical activity interventions on body mass index in children: a meta-analysis. *CMAJ*. 2009;180(7):719726. doi:10.1503/cmaj.080966.	X				

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Hartman MA, Hosper K, Stronks K. Targeting physical activity and nutrition interventions towards mothers with young children: a review on components that contribute to attendance and effectiveness. *Public Health Nutr*. 2011;14(8):1364-1381. doi:10.1017/S1368980010001941.			X		
Hartmann KE, Jerome RN, Lindegren ML, et al. *Primary care management of abnormal uterine bleeding*. AHRQ Comparative Effectiveness Reviews, Report No. 13-EHC025-EF. Rockville, MD: Agency for Healthcare Research and Quality; March 2013.			X		
Harwood AE, Smith GE, Cayton T, Broadbent E, Chetter IC. A systematic review of the uptake and adherence rates to supervised exercise programs in patients with intermittent claudication. *Ann Vasc Surg*. 2016;34:280289. doi:10.1016/j.avsg.2016.02.009.				X	
Hassan Y, Head V, Jacob D, Bachmann MO, Diu S, Ford J. Lifestyle interventions for weight loss in adults with severe obesity: a systematic review. *Clin Obes.* 2016;6(6):395-403. doi:10.1111/cob.12161.	X				
Head KJ, Noar SM, Iannarino NT, Grant Harrington N. Efficacy of text messaging-based interventions for health promotion: a meta-analysis. *Soc Sci Med.* 2013;97:41-48. doi:10.1016/j.socscimed.2013.08.003.			X		
Heath GW, Parra DC, Sarmiento OL, et al. Evidence-based intervention in physical activity: lessons from around the world. *Lancet.* 2012;380(9838):272-281. doi:10.1016/S0140-6736(12)60816-2.		X			
Hebden L, Chey T, Allman-Farinelli M. Lifestyle intervention for preventing weight gain in young adults: a systematic review and meta-analysis of RCTs. *Obes Rev.* 2012;13(8):692-710. doi:10.1111/j.1467-789X.2012.00990.x.	X				
Hendrie GA, Brindal E, Corsini N, Gardner C, Baird D, Golley RK. Combined home and school obesity prevention interventions for children: what behavior change strategies and intervention characteristics are associated with effectiveness? *Health Educ Behav*. 2012;39(2):159-171. doi:10.1177/1090198111420286.		X			
Hesketh KR, O'Malley C, Paes VM, et al. Determinants of change in physical activity in children 0-6 years of age: a systematic review of quantitative literature. *Sports Med.* 2017;47(7):1349-1374. doi:10.1007/s40279-016-0656-0.			X		

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Hillsdon M, Foster C, Thorogood M. Interventions for promoting physical activity. *Cochrane Database Syst Rev.* 2005;(1):Cd003180. doi:10.1002/14651858.CD003180.pub2.					X
Hinrichs T, Brach M. The general practitioner's role in promoting physical activity to older adults: a review based on program theory. *Curr Aging Sci.* 2012;5(1):41-50.			X		
Ho M, Garnett SP, Baur L, et al. Effectiveness of lifestyle interventions in child obesity: systematic review with meta-analysis. *Pediatrics.* 2012;130(6):e1647-e1671. doi:10.1542/peds.2012-1176.	X				
Höchsmann C, Schüpbach M, Schmidt-Trucksäss A. Effects of exergaming on physical activity in overweight individuals. *Sports Med.* 2016;46(6):845-60. doi:10.1007/s40279-015-0455-z.				X	
Hoehner CM, Brownson RC, Allen D, et al. Parks promoting physical activity: synthesis of findings from interventions in seven national parks. *J Phys Act Health*. 2010;7(suppl 1):S67-S81.					X
Hoehner CM, Ribeiro IC, Parra DC, et al. Physical activity interventions in Latin America: expanding and classifying the evidence. *Am J Prev Med*. 2013;44(3):e31-e40. doi:10.1016/j.amepre.2012.10.026.	X				
Hoehner CM, Soares J, Parra Perez D, et al. Physical activity interventions in Latin America: a systematic review. *Am J Prev Med*. 2008;34(3):224-233. doi:10.1016/j.amepre.2007.11.016.					X
Hollands GJ, Shemilt I, Marteau TM, et al. Altering micro-environments to change population health behaviour: towards an evidence base for choice architecture interventions. *BMC Public Health*. 2013;13:1218. doi:10.1186/1471-2458-13-1218.		X			
Hollis JL, Williams AJ, Sutherland R, et al. A systematic review and meta-analysis of moderate-to-vigorous physical activity levels in elementary school physical education lessons. *Prev Med.* 2016;86:34-54. doi:10.1016/j.ypmed.2015.11.018.	X				
Hong SY, Hughes S, Prohaska T. Factors affecting exercise attendance and completion in sedentary older adults: a meta-analytic approach. *J Phys Act Health.* 2008;5(3):385-397.	X				
Horodyska K, Luszczynska A, van den Berg M, et al. Good practice characteristics of diet and physical activity interventions and policies: an umbrella review. *BMC Public Health*. 2015;15:19. doi:10.1186/s12889-015-1354-9.	X				
Hou SI, Charlery SA, Roberson K. Systematic literature review of Internet interventions across health behaviors. *Health Psychol Behav Med*.	X				

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2014;2(1):455-481. doi:10.1016/j.jneb.2015.12.006.					
Howlett N, Trivedi D, Troop NA, Chater AM. What are the most effective behaviour change techniques to promote physical activity and/or reduce sedentary behaviour in inactive adults? A systematic review protocol. *BMJ Open.* 2015;5(8):e008573. doi:10.1136/bmjopen-2015-008573.		X			
Hughes SL, Seymour RB, Campbell RT, Whitelaw N, Bazzarre T. Best-practice physical activity programs for older adults: findings from the national impact study. *Am J Public Health.* 2009;99(2):362-368. doi:10.2105/AJPH.2007.131466.		X			
Hunter RF, Christian H, Veitch J, Astell-Burt T, Hipp JA, Schipperijn J. The impact of interventions to promote physical activity in urban green space: a systematic review and recommendations for future research. *Soc Sci Med.* 2015;124:246-256. doi:10.1016/j.socscimed.2014.11.051.			X		
Husebø AM, Dyrstad SM, Søreide JA, Bru E. Predicting exercise adherence in cancer patients and survivors: a systematic review and meta-analysis of motivational and behavioural factors. *J Clin Nurs.* 2013;22(1-2):4-21. doi:10.1111/j.1365-2702.2012.04322.x.	X				
Hutcheson AK, Piazza AJ, Knowlden AP. Work site-based environmental interventions to reduce sedentary behavior: a systematic review. *Am J Health Promot*. 2016;pii:0890117116674681. doi:10.1177/0890117116674681.			X		
Hwang R, Marwick T. Efficacy of home-based exercise programmes for people with chronic heart failure: a meta-analysis. *Eur J Prev Cardio*l. 2009;16(5):527-535. doi:10.1097/HJR.0b013e32832e097f.	X				
Hynynen ST, van Stralen MM, Sniehotta FF, et al. A systematic review of school-based interventions targeting physical activity and sedentary behaviour among older adolescents. *Int Rev Sport Exerc Psychol.* 2016;9(1):22-44. doi:10.1080/1750984X.2015.1081706.			X		
Increasing physical activity. A report on recommendations of the Task Force on Community Preventive Services. *MMWR Recomm Rep.* 2001;50(Rr-18):1-14.					X
Institute of Medicine. *Promising and Best Practices in Total Worker Health: Workshop Summary.* Washington, DC: The National Academies Press; 2014. doi:10.17226/18947.		X			

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Institute of Medicine. *The current state of obesity solutions in the united states: workshop summary.* Washington, DC: National Academies Press; Feb 2014. doi:https://doi.org/10.17226/18742.		X			
Ip S, Kitsios GD, Chung M, Lau J. *A process for robust and transparent rating of study quality: phase 1*. AHRQ Methods for Effective Health Care, Report No. 12-EHC004-EF. Rocville, MD: Agency for Healthcare Research and Quality; Nov 2011.			X		
Iruthayarajah J, McIntyre A, Cotoi A, Macaluso S, Teasell R. The use of virtual reality for balance among individuals with chronic stroke: a systematic review and meta-analysis. *Top Stroke Rehabil.* 2017;24(1):68-79. doi:10.1080/10749357.2016.1192361.	X				
Jackson NW, Howes FS, Gupta S, Doyle JL, Waters E. Interventions implemented through sporting organisations for increasing participation in sport. *Cochrane Database Syst Rev.* 2005;(2):Cd004812. doi:10.1002/14651858.CD004812.pub2.	X				
Jago R, Baranowski T. Non-curricular approaches for increasing physical activity in youth: a review. *Prev Med*. 2004;(1):157-163. doi:10.1016/j.ypmed.2004.01.014.					X
Jago R, Edwards MJ, Sebire SJ, et al. Bristol Girls Dance Project: a cluster randomised controlled trial of an after-school dance programme to increase physical activity among 11- to 12-year-old girls. *Public Heatlh Research.* May 2016.		X			
Jalali MS, Sharafi-Avarzaman Z, Rahmandad H, Ammerman AS. Social influence in childhood obesity interventions: a systematic review. *Obes Rev.* 2016;17(9):820-832. doi:10.1111/obr.12420.	X				
James E, Freund M, Booth A, et al. Comparative efficacy of simultaneous versus sequential multiple health behavior change interventions among adults: a systematic review of randomised trials. *Prev Med.* 2016;89:211-223. doi:10.1016/j.ypmed.2016.06.012.			X		
Jenkins A, Christensen H, Walker JG, Dear K. The effectiveness of distance interventions for increasing physical activity: a review. *Am J Health Promot.* 2009;24(2):102-117. doi:10.4278/ajhp.0801158.		X			
Jenkins F, Jenkins C, Gregoski MJ, Magwood GS. Interventions promoting physical activity in African American women: an integrative review. *J Cardiovasc Nurs.* 2017;32(1):22-29. doi:10.1097/JCN.0000000000000298.		X			
Jennings CA, Yun L, Loitz CC, Lee EY, Mummery WK. A systematic review of interventions to increase stair use. *Am J Prev Med.* 2017;52(1):106-114. doi:10.1016/j.amepre.2016.08.014.			X		

Citation	Outcome	Study Design	Exposure	Not ideal fit for replacement of de novo search	Other
Johnston W, Hoffman S, Thornton L. Mobile health: a synopsis and comment on "Increasing physical activity with mobile devices: a meta-analysis". *Transl Behav Med.* 2014;4(1):4-6. doi:10.1007/s13142-014-0254-3.		X			
Jones EJ, Fraley HE, Mazzawi J. Appreciating recent motherhood and culture: a systematic review of multimodal postpartum lifestyle interventions to reduce diabetes risk in women with prior gestational diabetes. *Matern Child Health J.* 2017;21(1):45-57. doi:10.1007/s10995-016-2092-z.			X		
Jones WS, Schmit KM, Vemulapalli S, et al. *Treatment strategies for patients with peripheral artery disease*. AHRQ Comparative Effectiveness Reviews, Report No. 13-EHC090-EF. Rockville, MD: Agency for Healthcare Research and Quality; May 2013.	X				
Jordan JL, Holden MA, Mason EE, Foster NE. Interventions to improve adherence to exercise for chronic musculoskeletal pain in adults *Cochrane Database Syst Rev.* Jan 2010;(1):CD005956. doi:10.1002/14651858.CD005956.pub2.					X
Joseph RP, Maddock JE. Observational Park-based physical activity studies: a systematic review of the literature. *Prev Med.* 2016;89:257-277. doi:10.1016/j.ypmed.2016.06.016.			X		
Kaewthummanukul T, Brown KC. Determinants of employee participation in physical activity: critical review of the literature. *AAOHN J.* 2006;54(6):249-261.		X			
Kahn EB, Ramsey LT, Brownson RC, et al. The effectiveness of interventions to increase physical activity. A systematic review. *Am J Prev Med.* 2002;22(suppl 4):73-107.					X
Kahn-Marshall JL, Gallant MP. Making healthy behaviors the easy choice for employees: a review of the literature on environmental and policy changes in worksite health promotion. *Health Educ. Behav.* 2012;39(6):752-776. doi:10.1177/1090198111434153.		X			
Kanekar A, Sharma M. Meta-analysis of school-based childhood obesity interventions in the UK and US. *Int Q Community Health Educ.* 2008;29(3):241-256. doi:10.2190/IQ.29.3.d.	X				
Kang M, Marshall SJ, Barreira TV, Lee JO. Effect of pedometer-based physical activity interventions: a meta-analysis. *Res Q Exerc Sport.* 2009;80(3):648-655. doi:10.1080/02701367.2009.10599604.					X

Citation	Outcome	Study Design	Exposure	Not ideal fit for replacement of de novo search	Other
Karmali KN, Davies P, Taylor F, Beswick A, Martin N, Ebrahim S. Promoting patient uptake and adherence in cardiac rehabilitation. *Cochrane Database Syst Rev.* June 2014;(6):CD007131. doi:10.1002/14651858.CD007131.pub3.	X				
Karol S, Robertson MM. Implications of sit-stand and active workstations to counteract the adverse effects of sedentary work: a comprehensive review. *Work*. 2015;52(2):255-267. doi:10.3233/WOR-152168.	X				
Katz DL, O'Connell M, Njike VY, Yeh MC, Nawaz H. Strategies for the prevention and control of obesity in the school setting: systematic review and meta-analysis. *Int J Obes (Lond).* 2008;32(12):1780-1789. doi:10.1038/ijo.2008.158.	X				
Kaushal N, Rhodes RE. The home physical environment and its relationship with physical activity and sedentary behavior: a systematic review. *Prev Med.* 2014;67:221-237. doi:10.1016/j.ypmed.2014.07.026.			X		
Kelishadi R, Azizi-Soleiman F. Controlling childhood obesity: a systematic review on strategies and challenges. *J Res Med Sci.* 2014;19(10):993-1008.				X	
Kelly S, Martin S, Kuhn I, Cowan A, Brayne C, Lafortune L. Barriers and facilitators to the uptake and maintenance of healthy behaviours by people at mid-life: a rapid systematic review. *PLoS One.* 2016;11(1):e0145074. doi:10.1371/journal.pone.0145074.				X	
Kennedy CM, Powell J, Payne TH, Ainsworth J, Boyd A, Buchan I. Active assistance technology for health-related behavior change: an interdisciplinary review. *J Med Internet Res.* 2012;14(3):e80. doi:10.2196/jmir.1893.				X	
Kesten JM, Griffiths PL, Cameron N. A systematic review to determine the effectiveness of interventions designed to prevent overweight and obesity in pre-adolescent girls. *Obes Rev*. 2011;12(12):997-1021. doi:10.1111/j.1467-789X.2011.00919.x.	X				
Kim K, Ok G, Jeon S, Kang M, Lee S. Sport-based physical activity intervention on body weight in children and adolescents: a meta-analysis. *J Sports Sci.* 2017;35(4):369-376. doi:10.1080/02640414.2016.1166389.	X				
Kohl LF, Crutzen R, de Vries NK. Online prevention aimed at lifestyle behaviors: a systematic review of reviews. *J Med Internet Res*. 2013;15(7):e146. doi:10.2196/jmir.2665.				X	
Koohsari MJ, Sugiyama T, Sahlqvist S, Mavoa S, Hadgraft N, Owen N. Neighborhood environmental attributes and adults' sedentary behaviors: review and research agenda. *Prev Med*. 2015;77:141-149.	X				

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doi:10.1016/j.ypmed.2015.05.027.					
Kopp LM, Gastelum Z, Guerrero CH, Howe CL, Hingorani P, Hingle M. Lifestyle behavior interventions delivered using technology in childhood, adolescent, and young adult cancer survivors: a systematic review. *Pediatr Blood Cancer.* 2017;64(1):13-17. doi:10.1002/pbc.26166.			X		
Korczak D, Dietl M, Steinhauser G. Effectiveness of programmes as part of primary prevention demonstrated on the example of cardiovascular diseases and the metabolic syndrome. *GMS Health Technol Assess.* 2011;7:Doc02. doi:10.3205/hta000093.	X				
Kuhlmann AK, Dietz PM, Galavotti C, England LJ. Weight-management interventions for pregnant or postpartum women. *Am J Prev Med.* 2008;34(6):523-528. doi:10.1016/j.amepre.2008.02.010.	X				
Kuijpers W, Groen WG, Aaronson NK, Harten WH. A systematic review of web-based interventions for patient empowerment and physical activity in chronic diseases: relevance for cancer survivors. *J Med Internet Res.* 2013;15(2):e37. doi:10.2196/jmir.2281.				X	
Kuoppala J, Lamminpaa A, Husman P. Work health promotion, job well-being, and sickness absences—a systematic review and meta-analysis. *J Occup Environ Med.* 2008;50(11):1216-1227. doi:10.1097/JOM.0b013e31818dbf92.	X				
Kurti AN, Davis DR, Redner R, et al. A review of the literature on remote monitoring technology in incentive-based interventions for health-related behavior change. *Transl Issues Psychol Sci.* 2016;2(2):128-152. doi:10.1037/tps0000067.					X
Lahham A, McDonald CF, Holland AE. Exercise training alone or with the addition of activity counseling improves physical activity levels in COPD: a systematic review and meta-analysis of randomized controlled trials. *Int J Chron Obstruct Pulmon Dis.* 2016;11:3121-3136. doi:10.2147/COPD.S121263.			X		
Lai SK, Costigan SA, Morgan PJ. Do school-based interventions focusing on physical activity, fitness, or fundamental movement skill competency produce a sustained impact in these outcomes in children and adolescents? A systematic review of follow-up studies. *Sports Med.* 2014;44(1):67-79. doi:10.1007/s40279-013-0099-9.			X		

Citation	Outcome	Study Design	Exposure	Not ideal fit for replacement of de novo search	Other
Lam MH, Leung AY. The effectiveness of health literacy oriented programs on physical activity behaviour in middle aged and older adults with type 2 diabetes: a systematic review. *Health Psychol Res.* 2016;4(1):5595. doi:10.4081/hpr.2016.5595.				X	
Lambert SD, Duncan LR, Kapellas S. A descriptive systematic review of physical activity interventions for caregivers: effects on caregivers' and care recipients' psychosocial outcomes, physical activity levels, and physical health. *Ann Behav Med.* 2016;50(6):907-919.			X		
Laplante C, Peng W. A systematic review of e-health interventions for physical activity: an analysis of study design, intervention characteristics, and outcomes. *Telemed J E Health.* 2011;17(7):509-523. doi:10.1089/tmj.2011.0013.				X	
Larkin L, Gallagher S, Cramp F, Brand C, Fraser A, Kennedy N. Behaviour change interventions to promote physical activity in rheumatoid arthritis: a systematic review. *Rheumatol Int.* 2015;35(10):1631-1640. doi:10.1007/s00296-015-3292-3.				X	
Larsen LH, Schou L, Lund HH, Langberg H. The physical effect of exergames in healthy elderly-a systematic review. *Games Health J.* 2013;2(4):205-212. doi:10.1089/g4h.2013.0036.	X				
Lau PW, Lau EY, Wong DP, Ransdell L. A systematic review of information and communication technology-based interventions for promoting physical activity behavior change in children and adolescents. *J Med Internet Res.* 2011;13(3):e48. doi:10.2196/jmir.1533.				X	
Lawlor DA, Hanratty B. The effect of physical activity advice given in routine primary care consultations: a systematic review. *J Public Health Med.* 2001;23(3):219-226.					X
Lawrence M, Kerr S, McVey MC, Godwin J. A systematic review of the effectiveness of secondary prevention lifestyle interventions designed to change lifestyle behaviour following stroke. *JBI Libr Syst Rev.* 2011;9(43):1782-1827.	X				
Lee J, Piao M, Byun A, Kim J. A systematic review and meta-analysis of intervention for pediatric obesity using mobile technology. *Stud Health Technol Inform.* 2016;225:491-494.	X				
Lee JE, Pope Z, Gao Z. The role of youth sports in promoting children's physical activity and preventing pediatric obesity: a systematic review. *Behav Med.* 2016;1-15. doi:10.1080/08964289.2016.1193462.			X		
Lehne G, Bolte G. Equity impact of interventions to promote physical activity in older adults: protocol for a systematic review. *Syst Rev.* 2016;5:17. doi:10.1186/s13643-016-0194-8.		X			

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Lemmens VE, Oenema A, Klepp KI, Henriksen HB, Brug J. A systematic review of the evidence regarding efficacy of obesity prevention interventions among adults. *Obes Rev.* 2008;9(5):446-455. doi:10.1111/j.1467-789X.2008.00468.x.	X				
Leung MM, Agaronov A, Grytsenko K, Yeh MC. Intervening to reduce sedentary behaviors and childhood obesity among school-age youth: a systematic review of randomized trials. *J Obes.* 2012;685430. http://dx.doi.org/10.1155/2012/685430.			X		
Lewis M, Peiris CL, Shields N. Long-term home and community-based exercise programs improve function in community-dwelling older people with cognitive impairment: a systematic review. *J Physiother.* 2017;63(1):23-29. doi:10.1016/j.jphys.2016.11.005.	X				
Li C, Chen S, Meng How Y, Zhang AL. Benefits of physical exercise intervention on fitness of individuals with Down syndrome: a systematic review of randomized-controlled trials. *Int J Rehabil Res.* 2013;36(3):187-195. doi:10.1097/MRR.0b013e3283634e9c.	X				
Liang Y, Lau PW. Effects of active videogames on physical activity and related outcomes among healthy children: a systematic review. *Games Health J.* 2014;3(3):122-144. doi:10.1089/g4h.2013.0070.			X		
Liao Y, Liao J, Durand CP, Dunton GF. Which type of sedentary behaviour intervention is more effective at reducing body mass index in children? A meta-analytic review. *Obes Rev.* 2014;15(3):159-168. doi:10.1111/obr.12112.	X				
Lien AS, Cho YH, Tsai JL. Effectiveness evaluation of healthy lifestyle interventions in childhood obesity prevention: a systematic review. *Hu Li Za Zhi.* 2013;60(4):33-42. doi:10.6224/JN.60.3.33.					X
Lin JS, Eder M, Weinmann S, et al. U.S. Preventive Services Task Force Evidence Syntheses, formerly Systematic Evidence Reviews. *Behavioral Counseling to Prevent Skin Cancer: Systematic Evidence Review to Update the 2003 U.S. Preventive Services Task Force Recommendation.* 2011. Report No.: 11-05152-EF-1.	X				
Lin JS, O'Connor E, Rossom RC, et al. U.S. Preventive Services Task Force Evidence Syntheses, formerly Systematic Evidence Reviews. *Screening for Cognitive Impairment in Older Adults: An Evidence Update for the U.S. Preventive Services Task Force.* 2013. Report No.: 14-05198-EF-1.	X				

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Lin JS, O'Connor E, Whitlock EP, et al. U.S. Preventive Services Task Force Evidence Syntheses, formerly Systematic Evidence Reviews. *Behavioral Counseling to Promote Physical Activity and a Healthful Diet to Prevent Cardiovascular Disease in Adults: Update of the Evidence for the U.S. Preventive Services Task Force.* 2010. Report No.: 11-05149-EF-1.					X
Lin JS, O'Connor EA, Evans CV, Senger CA, Rowland MG, Groom HC. U.S. Preventive Services Task Force Evidence Syntheses, formerly Systematic Evidence Reviews. *Behavioral Counseling to Promote a Healthy Lifestyle for Cardiovascular Disease Prevention in Persons With Cardiovascular Risk Factors: An Updated Systematic Evidence Review for the U.S. Preventive Services Task Force.* 2014. Report No.: 13-05179-EF-1.				X	
Lin YP, McCullagh MC, Kao TS, Larson JL. An integrative review: work environment factors associated with physical activity among white-collar workers. *West J Nurs Res.* 2014;36(2):262-283. doi:10.1177/0193945913503417.		X			
Lippevelde W, Verloigne M, Bourdeaudhuij I, et al. Does parental involvement make a difference in school-based nutrition and physical activity interventions? A systematic review of randomized controlled trials. *Int J Public Health*. 2012;57(4):673-678. doi:10.1007/s00038-012-0335-3.				X	
Lissau I. Prevention of overweight in the school arena. *Acta Paediatr.* 2007;96(454):12-18. doi:10.1111/j.1651-2227.2007.00164.x.		X			
Liu JJ, Davidson E, Bhopal R, et al. Modifying health promotion interventions for ethnic minority groups: systematic review of empirical evidence. *J Epidemiol Community Health.* 2010;64:A52-A53. doi:10.1136/jech.2010.120477.49					X
Loitz CC, Potter RJ, Walker JL, McLeod NC, Johnston NJ. The effectiveness of workplace interventions to increase physical activity and decrease sedentary behaviour in adults: protocol for a systematic review. *Syst Rev.* 2015;4:178. doi:10.1186/s13643-015-0166-4.		X			
Lorenc T, Petticrew M, Whitehead M, et al. Crime, fear of crime and mental health: synthesis of theory and systematic reviews of interventions and qualitative evidence. *Public Health Research.* March 2014. doi:10.3310/phr02020.	X				
Loveman E, Al-Khudairy L, Johnson RE, et al. Parent-only interventions for childhood overweight or obesity in children aged 5 to 11 years. *Cochrane Database Syst Rev.* 2015;12:CD012008. doi:10.1002/14651858.CD012008.	X				

Citation	Outcome	Study Design	Exposure	Not ideal fit for replacement of de novo search	Other
Lyzwinski LN. A systematic review and meta-analysis of mobile devices and weight loss with an intervention content analysis. *J Pers Med.* 2014;4(3):311-385. doi:10.3390/jpm4030311.	X				
Macmillan F, Kirk A, Mutrie N, Matthews L, Robertson K, Saunders DH. A systematic review of physical activity and sedentary behavior intervention studies in youth with type 1 diabetes: study characteristics, intervention design, and efficacy. *Pediatr Diabetes.* 2014;15(3):175-189. doi:10.1111/pedi.12060.			X		
Magnee T, Burdorf A, Brug J, et al. Equity-specific effects of 26 Dutch obesity-related lifestyle interventions. *Am J Prev Med.* 2013;44(6):e57-e66. doi:10.1016/j.amepre.2012.11.041.	X				
Maher CA, Lewis LK, Ferrar K, Marshall S, De Bourdeaudhuij I, Vandelanotte C. Are health behavior change interventions that use online social networks effective? A systematic review. *J Med Internet Res.* 2014;16(2):e40. doi:10.2196/jmir.2952.			X		
Maiano C, Normand CL, Aime A, Begarie J. Lifestyle interventions targeting changes in body weight and composition among youth with an intellectual disability: a systematic review. *Res Dev Disabil.* 2014;35(8):1914-1926. doi:10.1016/j.ridd.2014.04.014.	X				
Mansi S, Milosavljevic S, Baxter GD, Tumilty S, Hendrick P. A systematic review of studies using pedometers as an intervention for musculoskeletal diseases. *Br J Health Psychol.* 2014;(2):231. doi:10.1111/bjhp.12052.			X		
Marsh S, Foley LS, Wilks DC, Maddison R. Family-based interventions for reducing sedentary time in youth: a systematic review of randomized controlled trials. *Obes Rev.* 2014;15(2):117-133. doi:10.1111/obr.12105.			X		
Marshall AL, Owen N, Bauman AE. Mediated approaches for influencing physical activity: update of the evidence on mass media, print, telephone and website delivery of interventions. *J Sci Med Sport*. 2004;7(suppl 1):74-80.					X
Martin A, Fitzsimons C, Jepson R, et al. Interventions with potential to reduce sedentary time in adults: systematic review and meta-analysis. *Br J Sports Med.* 2015;49(16):1056-1063. doi:10.1136/bjsports-2014-094524.			X		
McKay FH, Cheng C, Wright A, Shill J, Stephens H, Uccellini M. Evaluating mobile phone applications for health behaviour change: a systematic review. *J Telemed Telecare.* Oct 2016;pii:1357633X16673538. doi:10.1177/1357633X16673538.	X				

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McKinnon RA, Siddiqi SM, Chaloupka FJ, Mancino L, Prasad K. Obesity-related policy/environmental interventions: a systematic review of economic analyses. *Am J Prev Med.* 2016;50(4):543-549. doi:10.1016/j.amepre.2015.10.021.	X				
McMillan KA, Kirk A, Hewitt A, MacRury S. A systematic and integrated review of mobile-based technology to promote active lifestyles in people with type 2 diabetes. *J Diabetes Sci Technol.* 2016;11(2):299-307. doi:10.1177/1932296816656018.				X	
Michael YL, Lin JS, Whitlock EP, et al. U.S. Preventive Services Task Force Evidence Syntheses, formerly Systematic Evidence Reviews. *Interventions to Prevent Falls in Older Adults: An Updated Systematic Review.* Report No. 11-05150-EF-1. Rockville, MD: Agency for Healthcare Research and Quality; Dec 2010.	X		X		
Michie S, Abraham C, Whittington C, McAteer J, Gupta S. Effective techniques in healthy eating and physical activity interventions: a meta-regression. *Health Psychol.* 2009;28(6):690-701. doi:10.1037/a0016136.					X
Miller KJ, Adair BS, Pearce AJ, Said CM, Ozanne E, Morris MM. Effectiveness and feasibility of virtual reality and gaming system use at home by older adults for enabling physical activity to improve health-related domains: a systematic review. *Age Ageing.* 2014;43(2):188-195. doi:10.1093/ageing/aft194.				X	
Minatto G, Barbosa Filho VC, Berria J, Petroski EL. School-based interventions to improve cardiorespiratory fitness in adolescents: systematic review with meta-analysis. *Sports Med.* 2016;46(9):1273-1292. doi:10.1007/s40279-016-0480-6.	X				
Mita G, Ni Mhurchu C, Jull A. Effectiveness of social media in reducing risk factors for noncommunicable diseases: a systematic review and meta-analysis of randomized controlled trials. *Nutr Rev.* 2016;74(4):237-247. doi:10.1093/nutrit/nuv106.			X		
Mitchell MS, Goodman JM, Alter DA, et al. Financial incentives for exercise adherence in adults: systematic review and meta-analysis. *Am J Prev Med.* 2013;45(5):658-667. doi:10.1016/j.amepre.2013.06.017.			X		
Molina KI, Ricci NA, de Moraes SA, Perracini MR. Virtual reality using games for improving physical functioning in older adults: a systematic review. *J Neuroeng Rehabil.* 2014;11:156. doi:10.1186/1743-0003-11-156.	X				

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Monroe CM, Thompson DL, Bassett DR, Fitzhugh EC, Raynor HA. Usability of mobile phones in physical activity–related research: a systematic review. *Am J Health Educ.* 2015;46(4):196-206. doi:10.1080/19325037.2015.1044141.			X		
Moore GF, Littlecott HJ, Turley R, Waters E, Murphy S. Socioeconomic gradients in the effects of universal school-based health behaviour interventions: a systematic review of intervention studies. *BMC Public Health.* 2015;15:907. doi:10.1186/s12889-015-2244-x.	X				
Moore M, Warburton J, O'Halloran PD, Shields N, Kingsley M. Effective community-based physical activity interventions for older adults living in rural and regional areas: a systematic review. *J Aging Phys Act.* 2016;24(1):158-167. doi:10.1123/japa.2014-0218.			X		
Morey MC, Sloane R, Pieper CF, et al. Effect of physical activity guidelines on physical function in older adults. *J Am Geriatr Soc.* 2008;56(10):1873-1878. doi:10.1111/j.1532-5415.2008.01937.x.		X			
Morgan F, Battersby A, Weightman AL, et al. Adherence to exercise referral schemes by participants—what do providers and commissioners need to know? A systematic review of barriers and facilitators. *BMC Public Health.* 2016;16:227. doi:10.1186/s12889-016-2882-7.				X	
Morgan O. Approaches to increase physical activity: reviewing the evidence for exercise-referral schemes. *Public Health.* 2005;119(5):361-370. doi:10.1016/j.puhe.2004.06.008.		X			
Mounesan L, Sepidarkish M, Hosseini H, et al. Policy brief on promoting physical activity among adolescents. *Int J Prev Med.* 2012;3(9):599-606.		X			
Muellmann S, Forberger S, Mollers T, Zeeb H, Pischke CR. Effectiveness of eHealth interventions for the promotion of physical activity in older adults: a systematic review protocol. *Syst Rev.* March 2016;5:47. doi:10.1186/s13643-016-0223-7.		X			
Muller AM, Alley S, Schoeppe S, Vandelanotte C. The effectiveness of e-& mHealth interventions to promote physical activity and healthy diets in developing countries: a systematic review. *Int J Behav Nutr Phys Act.* 2016;13(1):109. doi:10.1186/s12966-016-0434-2.			X		
Muntaner A, Vidal-Conti J, Palou P. Increasing physical activity through mobile device interventions: a systematic review. *Health Informatics J.* 2016;22(3):451-469. doi:10.1177/1460458214567004.				X	

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Mura G, Rocha NB, Helmich I, et al. Physical activity interventions in schools for improving lifestyle in European countries. *Clin Pract Epidemiol Ment Health.* 2015;11(suppl 1 M5):77-101. doi:10.2174/1745017901511010077.	X				
National Academies. *Local government actions to prevent childhood obesity.* Washington, DC: The National Academies Press; 2009. doi:10.17226/12674.					X
National Clinical Guideline, Centre. National Institute for Health and Clinical Excellence: Guidance. *Hypertension: the clinical management of primary hypertension in adults: update of clinical guidelines 18 and 34.* London, UK: Royal College of Physicians (UK); Aug 2011.			X		
Killoran A, Doyle N, Waller S, Wohlgemuth C, Crombie H. National Institute for Health and Clinical Excellence. *Transport interventions promoting safe cycling and walking: evidence briefing.* London, UK: National Institute for Health and Clinical Excellence; July 2006.					X
Neville LM, Milat AJ, O'Hara B. Computer-tailored weight reduction interventions targeting adults: a narrative systematic review. *Health Promot J Austr.* 2009;20(1):48-57.	X				
Nieuwaal PA, Wittink HM, Valk HW. Effectiveness of supervised exercise programmes versus exercise advice in individuals with diabetes mellitus type 2: a systematic review. *Nederlands Tijdschrift voor Fysiotherapie.* 2009;119(6):198-205.					X
Nigg CR, Long CR. A systematic review of single health behavior change interventions vs. multiple health behavior change interventions among older adults. *Transl Behav Med.* 2012;2(2):163-179. doi:10.1007/s13142-012-0130-y.			X		
Nixon CA, Moore HJ, Douthwaite W, et al. Identifying effective behavioural models and behaviour change strategies underpinning preschool- and school-based obesity prevention interventions aimed at 4-6-year-olds: a systematic review. *Obes Rev.* 2012;13(suppl 1):106-117. doi:10.1111/j.1467-789X.2011.00962.x.				X	
Norman GJ, Zabinski MF, Adams MA, Rosenberg DE, Yaroch AL, Atienza AA. A review of eHealth interventions for physical activity and dietary behavior change. *Am J Prev Med.* 2007;33(4):336-345. doi:10.1016/j.amepre.2007.05.007.					X
Norris E, Hamer M, Stamatakis E. Active video games in schools and effects on physical activity and health: a systematic review. *J Pediatr.* 2016;172:40-46.e5. doi:10.1016/j.jpeds.2016.02.001.			X		

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O'Brien N, McDonald S, Araujo-Soares V, et al. The features of interventions associated with long-term effectiveness of physical activity interventions in adults aged 55-70 years: a systematic review and meta-analysis. *Health Psychol Rev.* 2015;9(4):417-433. doi:10.1080/17437199.2015.1012177.				X	
O'Brien TD, Noyes J, Spencer LH, Kubis HP, Hastings RP, Whitaker R. Systematic review of physical activity and exercise interventions to improve health, fitness and well-being of children and young people who use wheelchairs. *BMJ Open Sport Exerc Med.* 2016;2(1):e000109. doi:10.1136/bmjsem-2016-000109.				X	
Ogilvie D, Egan M, Hamilton V, Petticrew M. Promoting walking and cycling as an alternative to using cars: systematic review. *BMJ.* 2004;329(7469):763. doi:10.1136/bmj.38216.714560.55.					X
Ogilvie D, Egan M, Hamilton V, Petticrew M. Systematic reviews of health effects of social interventions: 2. Best available evidence: how low should you go? *J Epidemiol Community Health.* 2005;59(10):886-892. doi:10.1136/jech.2005.034199.		X			
Ogilvie D, Foster CE, Rothnie H, et al. Interventions to promote walking: systematic review. *BMJ.* 2007;334(7605):1204. doi:10.1136/bmj.39198.722720.BE.					X
Ogilvie D, Hamilton V, Egan M, Petticrew M. Systematic reviews of health effects of social interventions: 1. Finding the evidence: how far should you go? *J Epidemiol Community Health.* 2005;59(9):804-808. doi:10.1136/jech.2005.034181.		X			
Olanrewaju O, Kelly S, Cowan A, Brayne C, Lafortune L. Physical activity in community dwelling older people: a systematic review of reviews of interventions and context. *PLoS One.* 2016;11(12):e0168614. doi:10.1371/journal.pone.0168614.				X	
Olsen JM, Nesbitt BJ. Health coaching to improve healthy lifestyle behaviors: an integrative review. *Am J Health Promot.* 2010;25(1):e1-e12. doi:10.4278/ajhp.090313-LIT-101.					X
O'Reilly GA, Spruijt-Metz D. Current mHealth technologies for physical activity assessment and promotion. *Am J Prev Med.* 2013;45(4):501-507. doi:10.1016/j.amepre.2013.05.012.				X	
Orrow G, Kinmonth AL, Sanderson S, Sutton S. Effectiveness of physical activity promotion based in primary care: systematic review and meta-analysis of randomised controlled trials. *BMJ: British Medical Journal* (Overseas & Retired			X		

Citation	Outcome	Study Design	Exposure	Not ideal fit for replacement of de novo search	Other
Doctors Edition). 2012;344(7850):16-16. doi:10.1136/bmj.e1389.					
Oude Luttikhuis H, Baur L, Jansen H, et al. Interventions for treating obesity in children. *Cochrane Database Syst Rev*. 2009;(1):CD001872. doi:10.1002/14651858.CD001872.pub2.	X				X
Papas MA, Alberg AJ, Ewing R, Helzlsouer KJ, Gary TL, Klassen AC. The built environment and obesity. *Epidemiol Rev.* 2007;29:129-143. doi:10.1093/epirev/mxm009.	X				
Partnership for Prevention. *Investing in health: proven health promotion practices for workplaces*. Washington: DC, Partnership for Prevention; May 2008.			X		
Peckham S, Falconer J, Gillam S, et al. The organization and delivery of health improvement in general practice and primary care: a scoping study. *HS&DR.* June 2015.		X			
Peirson L, Douketis J, Ciliska D, Fitzpatrick-Lewis D, Ali MU, Raina P. Treatment for overweight and obesity in adult populations: a systematic review and meta-analysis. *CMAJ Open*. 2014;2(4):E306-E317. doi:10.9778/cmajo.20140012.	X				
Peirson L, Fitzpatrick-Lewis D, Morrison K, et al. Prevention of overweight and obesity in children and youth: a systematic review and meta-analysis. *CMAJ Open.* 2015;3(1):E23-E33. doi:10.9778/cmajo.20140053.	X				
Peirson L, Fitzpatrick-Lewis D, Morrison K, Warren R, Usman Ali M, Raina P. Treatment of overweight and obesity in children and youth: a systematic review and meta-analysis. *CMAJ Open*. 2015;3(1):E35-E46. doi:10.9778/cmajo.20140047.	X				
Pennington M, Visram S, Donaldson C, et al. Cost-effectiveness of health-related lifestyle advice delivered by peer or lay advisors: synthesis of evidence from a systematic review. *Cost Eff Resour Alloc.* 2013;11(1):30. doi:10.1186/1478-7547-11-30.	X				
Pereira MJ, Coombes BK, Comans TA, Johnston V. The impact of onsite workplace health-enhancing physical activity interventions on worker productivity: a systematic review. *Occup Environ Med.* 2015;72(6):401-412. doi:10.1136/oemed-2014-102678.	X				
Perez-Alonso J, Ballesteros-Alvaro AM, Gonzalez-Esteban MP, Delgado-Gonzalez E, Mediavilla-Marcos ME. What non-drug interventions are effective in controlling hypertension adult essential in primary care? *Evidentia.* 2012;9(37).		X			
Perkins C, Steinbach R, Tompson L, et al. What is the effect of reduced street lighting on crime and road traffic injuries at night? A mixed-methods study. *Public Health Research*. Sept 2015.		X			

Citation	Outcome	Study Design	Exposure	Not ideal fit for replacement of de novo search	Other
Petrella RJ, Lattanzio CN. Does counseling help patients get active? Systematic review of the literature. *Can Fam Physician.* 2002;48:72-80.					X
Pfaeffli Dale L, Dobson R, Whittaker R, Maddison R. The effectiveness of mobile-health behaviour change interventions for cardiovascular disease self-management: A systematic review. *Eur J Prev Cardiol.* 2016;23(8):801-817. doi:10.1177/2047487315613462.			X		
Phung OJ, Coleman CI, Baker EL, et al. *Effectiveness of recombinant human growth hormone (rhGH) in the treatment of patients with cystic fibrosis*. AHRQ Comparative Effectiveness Reviews. Report No. 11-EHC003-EF. Rockville, MD: Agency for Healthcare Research and Quality; Oct 2010.			X		
Playdon M, Thomas G, Sanft T, Harrigan M, Ligibel J, Irwin M. Weight loss intervention for breast cancer survivors: a systematic review. *Curr Breast Cancer Rep.* 2013. 5(3):222-246. doi:10.1007/s12609-013-0113-0.	X				
Plotnikoff RC, Costigan SA, Karunamuni ND, Lubans DR. Community-based physical activity interventions for treatment of type 2 diabetes: a systematic review with meta-analysis. *Front Endocrinol (Lausanne).* Jan 2013;4:3. doi:10.3389/fendo.2013.00003.				X	
Posadzki P, Mastellos N, Ryan R, et al. Automated telephone communication systems for preventive healthcare and management of long-term conditions. *Cochrane Database Syst Rev.* 2016;12:Cd009921. doi:10.1002/14651858.CD009921.pub2.	X				
Power BT, Kiezebrink K, Allan JL, Campbell MK. Effects of workplace-based dietary and/or physical activity interventions for weight management targeting healthcare professionals: a systematic review of randomised controlled trials. *BMC Obes.* Nov 2014;1:23. doi:10.1186/s40608-014-0023-3.	X				
Pressick EL, Gray MA, Cole RL, Burkett BJ. A systematic review on research into the effectiveness of group-based sport and exercise programs designed for Indigenous adults. *J Sci Med Sport.* 2016;19(9):726-732. doi:10.1016/j.jsams.2015.11.005.	X				
Priest N, Armstrong R, Doyle J, Waters E. Interventions implemented through sporting organisations for increasing participation in sport. *Cochrane Database Syst Rev.* 2008;(3):Cd004812. doi:10.1002/14651858.CD004812.pub3.	X				
Primack BA, Carroll MV, McNamara M, et al. Role of video games in improving health-related outcomes: a systematic review. *Am J Prev Med.*				X	

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2012;42(6):630-638. doi:10.1016/j.amepre.2012.02.023.					
Prince SA, Reed JL, Martinello N, et al. Why are adult women physically active? A systematic review of prospective cohort studies to identify intrapersonal, social environmental and physical environmental determinants. *Obes Rev.* 2016;17(10):919-944. doi:10.1111/obr.12432.				X	
Prince SA, Saunders TJ, Gresty K, Reid RD. A comparison of the effectiveness of physical activity and sedentary behaviour interventions in reducing sedentary time in adults: a systematic review and meta-analysis of controlled trials. *Database of Abstracts of Reviews of Effects.* 2014;(2):905-919. doi:10.1111/obr.12215.			X		
Pronk NP. Physical activity promotion in business and industry: evidence, context, and recommendations for a national plan. *J Phys Act Health.* 2009;6(suppl 2):S220-S235.		X			
Proper KI, Koning M, Beek AJ, Hildebrandt VH, Bosscher RJ, Mechelen W. The effectiveness of worksite physical activity programs on physical activity, physical fitness, and health. *Clin J Sport Med.* 2003;13(2):106-117.			X		
Pryjmachuk S, Elvey R, Kirk S, Kendal S, Bower P, Catchpole R. . Developing a model of mental health self-care support for children and young people through an integrated evaluation of available types of provision involving systematic review, meta-analysis and case study. *HS&DR.* June 2014.	X				
Pugh G, Gravestock HL, Hough RE, King WM, Wardle J, Fisher A. Health behavior change interventions for teenage and young adult cancer survivors: a systematic review. *J Adolesc Young Adult Oncol.* 2016;5(2):91-105. doi:10.1089/jayao.2015.0042.			X		
Qiu S, Cai X, Chen X, Yang B, Sun Z. Step counter use in type 2 diabetes: a meta-analysis of randomized controlled trials. *BMC Medicine.* 2014;12(1):36. doi:10.1186/1741-7015-12-36.			X		
Qiu S, Cai X, Ju C, et al. Step counter use and sedentary time in adults: a meta-analysis. *Medicine (Baltimore).* 2015;94(35):e1412. doi:10.1097/MD.0000000000001412.			X		
Raber M, Swartz MC, Santa Maria D, et al. Parental involvement in exercise and diet interventions for childhood cancer survivors: a systematic review. *Pediatr Res.* 2016;80(3):338-346. doi:10.1038/pr.2016.84.	X				
Mattke S, Liu H, Caloyeras J, et al. Workplace wellness programs study: final report. *Rand Health Q.* 2013;3(2):7.				X	

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Reed JL, Prince SA, Cole CA, et al. Workplace physical activity interventions and moderate-to-vigorous intensity physical activity levels among working-age women: a systematic review protocol. *Syst Rev.* Dec 2014;3:147. doi:10.1186/2046-4053-3-147.		X			
Reynolds R, McKenzie S, Allender S, Brown K, Foulkes C. Systematic review of incidental physical activity community interventions. *Prev Med.* Oct 2014;67:46-64. doi:10.1016/j.ypmed.2014.06.023.			X		
Rhodes RE, Quinlan A. Predictors of physical activity change among adults using observational designs. *Sports Med.* 2015;45(3):423-441. doi:10.1007/s40279-014-0275-6.	X				
Rhodes RE, Warburton DE, Murray H. Characteristics of physical activity guidelines and their effect on adherence: a review of randomized trials. *Sports Med.* 2009;39(5):355-375. doi:10.2165/00007256-200939050-00003.		X			
Richards J, Thorogood M, Hillsdon M, Foster C. Face-to-face versus remote and web 2.0 interventions for promoting physical activity. *Cochrane Database Syst Rev.* 2013;(9):CD010393. doi:10.1002/14651858.CD010393.pub2.	X				
Richardson CR, Newton TL, Abraham JJ, Sen A, Jimbo M, Swartz AM. A meta-analysis of pedometer-based walking interventions and weight loss. *Annals of Family Medicine.* 2008;6(1):69-77. doi:10.1370/afm.761.	X				
Ridgers ND, McNarry MA, Mackintosh KA. Feasibility and effectiveness of using wearable activity trackers in youth: a systematic review. *JMIR Mhealth Uhealth.* 2016;4(4):e129. doi:10.2196/mhealth.6540.			X		
Robert Wood Johnson Foundation. *Lessons learned: promoting physical activity at the community level.* Grant Results Special Report. Sept 2005.					X
Robert Wood Johnson Foundation. *Making the case for designing active cities*. Research Synthesis. Feb 2015.				X	
Robert Wood Johnson Foundation. *Parks, playgrounds and active living*. Research Synthesis. Feb 2010.					X
Robert Wood Johnson Foundation. *Playworks implementation in 17 schools from 6 U.S. cities*. Evaluation Report. May 2013.				X	
Robert Wood Johnson Foundation. *Preventing obesity among preschool children: how can child-care settings promote healthy eating and physical activity?* Research Synthesis. Oct 2011.				X	
Robert Wood Johnson Foundation. *The power of trails for promoting physical activity in communities*. Research Synthesis. Jan 2011.			X		

Citation	Outcome	Study Design	Exposure	Not ideal fit for replacement of de novo search	Other
Robert Wood Johnson Foundation. *Using shared use agreements and street-scale improvements to support physical activity among Latino youths*. Research Review. July 2013.			X		
Robert Wood Johnson Foundation. *Walking and biking to school, physical activity and health outcomes*. Research Brief. May 2009.					X
Robinson LE, Webster EK, Whitt-Glover MC, Ceaser TG, Alhassan S. Effectiveness of pre-school- and school-based interventions to impact weight-related behaviours in African American children and youth: a literature review. *Obes Rev.* . 2014;15(suppl 4):5-25. doi:10.1111/obr.12208.			X		
Robroek SJ, van Lenthe FJ, van Empelen P, Burdorf A. Determinants of participation in worksite health promotion programmes: a systematic review. *Int J Behav Nutr Phys Act.* May 2009;6:26. doi:10.1186/1479-5868-6-26.					X
Rodrigues AL, Ball J, Ski C, Stewart S, Carrington MJ. A systematic review and meta-analysis of primary prevention programmes to improve cardio-metabolic risk in non-urban communities. *Prev Med.* 2016;87:22-34. doi:10.1016/j.ypmed.2016.02.011.			X		
Salmon J, Booth ML, Phongsavan P, Murphy N, Timperio A. Promoting physical activity participation among children and adolescents. *Epidemiologic Reviews.* 2007;29(1):144-159. doi:10.1093/epirev/mxm010.					X
Sarmiento O, Torres A, Jacoby E, Pratt M, Schmid TL, Stierling G. The Ciclovia-Recreativa: a mass-recreational program with public health potential. *J Phys Act Health.* 2010;7(suppl 2):S163-S180.					X
Saunders LE, Green JM, Petticrew MP, Steinbach R, Roberts H. What are the health benefits of active travel? A systematic review of trials and cohort studies. *PLoS One.* 2013;8(8):e69912. doi:10.1371/journal.pone.0069912.	X				
Sazlina SG, Browning C, Yasin S. Interventions to promote physical activity in older people with type 2 diabetes mellitus: a systematic review. *Front Public Health.* Dec 2013;1:71. doi:10.3389/fpubh.2013.00071.			X		
Schoeppe S, Alley S, Van Lippevelde W, et al. Efficacy of interventions that use apps to improve diet, physical activity and sedentary behaviour: a systematic review. *Int J Behav Nutr Phys Act.* 2016;13(1):127. doi:10.1186/s12966-016-0454-y.			X		
Seo DC, Sa J. A meta-analysis of psycho-behavioral obesity interventions among US multiethnic and minority adults. *Prev Med.* 2008;47(6):573-582. doi:10.1016/j.ypmed.2007.12.010.	X				

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Shamliyan TA, Wang SY, Olson-Kellogg B, Kane RL. *Physical therapy interventions for knee pain secondary to osteoarthritis*. AHRQ Comparative Effectiveness Reviews. Report No. 12(13)-EHC115-EF. Rockville, MD: Agency for Healthcare Research and Quality; Nov 2012.	X				
Sharma M. Physical activity interventions in Hispanic American girls and women. *Obes Rev.* 2008;9(6):560-571. doi:10.1111/j.1467-789X.2008.00501.x.					X
Sherry AP, Pearson N, Clemes SA. The effects of standing desks within the school classroom: a systematic review. *Prev Med Rep.* 2016;3:338-347. doi:10.1016/j.pmedr.2016.03.016.			X		
Short CE, James EL, Plotnikoff RC, Girgis A. Efficacy of tailored-print interventions to promote physical activity: a systematic review of randomised trials. *Int J Behav Nutr Phys Act.* Oct 2011;8:113. doi:10.1186/1479-5868-8-113.			X		
Shrestha N, Bhaumik S. Are interventions to reduce sitting at workplace effective? *J Family Med Prim Care.* 2015;4(3):331-332. doi:10.4103/2249-4863.161309.		X			
Shrestha N, Ijaz S, Kukkonen-Harjula KT, Kumar S, Nwankwo CP. Workplace interventions for reducing sitting at work. *Cochrane Database Syst Rev.* 2015;1:Cd010912. doi:10.1002/14651858.CD010912.pub2.			X		
Sisson SB, Krampe M, Anundson K, Castle S. Obesity prevention and obesogenic behavior interventions in child care: a systematic review. *Prev Med.* 2016;87:57-69. doi:10.1016/j.ypmed.2016.02.016.				X	
Skelly AC, Hashimoto R, Buckley DI, et al. . *Noninvasive testing for coronary artery disease*. AHRQ Comparative Effectiveness Reviews. Report No. 16-EHC011-EF. Rockville, MD: Agency for Healthcare Research and Quality; March 2016.	X		X		
Smith SM, Wallace E, O'Dowd T, Fortin M. Interventions for improving outcomes in patients with multimorbidity in primary care and community settings. *Cochrane Database Syst Rev.* 2016; 3:CD006560. doi:10.1002/14651858.CD006560.pub3.			X		
Smith SA, Ansa B. A systematic review of lifestyle interventions for chronic diseases in rural communities. *J Ga Public Health Assoc.* 2016;5(4):304-313. doi:10.21663/jgpha.5.404.	X				
Snethen JA, Broome ME, Treisman P, Castro E, Kelber ST. Effective weight loss for children: a meta-analysis of intervention studies 2002-2015. *Worldviews Evid Based Nurs.* 2016;13(4):294-302. doi:10.1111/wvn.12156.	X				

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Sorensen JB, Skovgaard T, Puggaard L. Exercise on prescription in general practice: a systematic review. *Scand JPrim Health Care.* 2006;24(2):69-74. doi:10.1080/02813430600700027.					X
Stephens J, Allen J. Mobile phone interventions to increase physical activity and reduce weight: a systematic review. *J Cardiovasc Nurs.* 2013;28(4):320-329. doi:10.1097/JCN.0b013e318250a3e7.				X	
Stewart F, Avenell A. Behavioural interventions for severe obesity before and/or after bariatric surgery: a systematic review and meta-analysis. *Obes Surg.* 2016;26(6):1203-1214. doi:10.1007/s11695-015-1873-6	X				
Stewart G, Anokye NK, Pokhrel S. What interventions increase commuter cycling? A systematic review. *BMJ Open.* 2015;5(8):e007945. doi:10.1136/bmjopen-2015-007945.			X		
Stoner L, Rowlands D, Morrison A, et al. Efficacy of exercise intervention for weight loss in overweight and obese adolescents: meta-analysis and implications. *Sports Med.* 2016;46(11):1737-1751. doi:10.1007/s40279-016-0537-6.	X				
Stoutenberg, M, Stanzilis K, Falcon A. Translation of lifestyle modification programs focused on physical activity and dietary habits delivered in community settings. *Int J Behav Med.* 2015;22(3):312-327. doi:10.1007/s12529-014-9438-y.			X		
Stubbs B, Williams J, Shannon J, Gaughran F, Craig T. Peer support interventions seeking to improve physical health and lifestyle behaviours among people with serious mental illness: a systematic review. *Int J Ment Health Nurs.* 2016;25(6):484-495. doi:10.1111/inm.12256.			X		
Sumamo Schellenberg E, Dryden DM, Vandermeer B, Ha C, Korownyk C. Lifestyle interventions for patients with and at risk for type 2 diabetes: a systematic review and meta-analysis. *Ann Intern Med.* 2013;159(8):543-551. doi:10.7326/0003-4819-159-8-201310150-00007.	X				
Sumamo E, Ha C, Korownyk C, Vandermeer B, Dryden DM. *Lifestyle interventions for four conditions: type 2 diabetes, metabolic syndrome, breast cancer, and prostate cancer*. AHRQ Technology Assessments. Rockville, MD: Agency for Healthcare Research and Quality; May 2011.	X				
Sun C, Pezic A, Tikellis G, et al. Effects of school-based interventions for direct delivery of physical activity on fitness and cardiometabolic markers in children and adolescents: a systematic review of randomized controlled trial. *Obes Rev.* 2013;14(10):818-838. doi:10.1111/obr.12047.	X				

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Sung-Chan P, Sung YW, Zhao X, Brownson RC. Family-based models for childhood-obesity intervention: a systematic review of randomized controlled trials. *Obes Rev.* 2013;14(4):265-278. doi:10.1111/obr.12000.	X				
Sushames A, van Uffelen JG, Gebel K. Do physical activity interventions in Indigenous people in Australia and New Zealand improve activity levels and health outcomes? A systematic review. *Int J Behav Nutr Phys Act.* 2016;13(1):129. doi:10.1186/s12966-016-0455-x.				X	
Sweet SN, Fortier MS. Improving physical activity and dietary behaviours with single or multiple health behaviour interventions? A synthesis of meta-analyses and reviews. *Int J Environ Res Public Health.* 2010;7(4):1720-1743. doi:10.3390/ijerph7041720.					X
Taggart J, Williams A, Dennis S, et al. A systematic review of interventions in primary care to improve health literacy for chronic disease behavioral risk factors. *BMC Fam Pract.* June 2012;13:49. doi:10.1186/1471-2296-13-49.			X		
Tambor M, Pavlova M, Golinowska S, Arsenijevic J, Groot W. Financial incentives for a healthy life style and disease prevention among older people: a systematic literature review. *BMC Health Serv Res.* 2016;16(suppl 5):426. doi:10.1186/s12913-016-1517-0.			X		
Teixeira PJ, Carraca EV, Markland D, Silva MN, Ryan RM. Exercise, physical activity, and self-determination theory: a systematic review. *Int J Behav Nutr Phys Act.* June 2012;9:78. doi:10.1186/1479-5868-9-78.				X	
Temple M, Robinson JC. A systematic review of interventions to promote physical activity in the preschool setting. *J Spec Pediatr Nurs.* 2014;(2):274-284. doi:10.1111/jspn.12081.				X	
The National Institute for Health and Care Excellence. *Physical activity and the environment*. Public Health Guideline [PH8]; Jan 2008.					X
The National Institute for Health and Care Excellence. *Physical activity in the workplace*. Public Health Guideline [PH13]; May 2008.					X
Thomas H, Fitzpatrick-Lewis D. Effectiveness of interventions to increase physical activity among marginalized populations. *Database of Abstracts of Reviews of Effects.* 2007;(2):87.					X
Thompson M, Dana T, Bougatsos C, Blazina I, Norris S. *Screening for Hypertension in Children and Adolescents to Prevent Cardiovascular Disease*. Systematic Review for the U.S. Preventive Services Task Force. Rockville, MD: Agency for Healthcare Research and Quality; Feb 2013.			X		

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Timperio A, Salmon J, Ball K. Evidence-based strategies to promote physical activity among children, adolescents and young adults: review and update. *J Sci Med Sport.* 2004;7(suppl 1):20-29.		X			
Uhlig K, Balk EM, Earley A, et al. *Assessment on implantable defibrillators and the evidence for primary prevention of sudden cardiac death*. AHRQ Technology Assessments. Rockville, MD: Agency for Healthcare Research and Quality; June 2013.	X				
U.S. Department of Health and Human Services. *Physical activity guidelines for Americans midcourse report strategies to increase physical activity among youth*. Washington, DC: U.S. Department of Health and Human Services; 2012.			X		
Valenzuela T, Okubo Y, Woodbury A, Lord SR, Delbaere K. Adherence to technology-based exercise programs in older adults: a systematic review. *J Geriatr Phys Ther.* June 2016. doi:10.1519/JPT.0000000000000095.			X		
Valenzuela T. Efficacy of progressive resistance training interventions in older adults in nursing homes: a systematic review. *J Am Med Dir Assoc.* 2012. 13(5):418-428.	X				
van der Deijl M, Etman A, Kamphuis CB, van Lenthe FJ. Participation levels of physical activity programs for community-dwelling older adults: a systematic review. *BMC Public Health.* Dec 2014;14:1301. doi:10.1186/1471-2458-14-1301.	X				
van Dongen JM, Proper KI, van Wier MF, et al. A systematic review of the cost-effectiveness of worksite physical activity and/or nutrition programs. *Scand J Work Environ Health.* 2012;38(5):393-408. doi:10.5271/sjweh.3275.	X				
Van Dyck D, Cerin E, Conway TL, et al. Perceived neighborhood environmental attributes associated with adults' leisure-time physical activity: findings from Belgium, Australia and the USA. *Health Place.* 2013;19:59-68. doi:10.1016/j.healthplace.2012.09.017.		X			
Van Holle V, Deforche B, Van Cauwenberg J, et al. Relationship between the physical environment and different domains of physical activity in European adults: a systematic review. *BMC Public Health.* Sept 2012;12:807. doi:10.1186/1471-2458-12-807.				X	
van Sluijs EM, McMinn AM, Griffin SJ. Effectiveness of interventions to promote physical activity in children and adolescents: systematic review of controlled trials. *Br J Sports Med.* 2008;42(8):653-657.					X
Vandelanotte C, Spathonis KM, Eakin EG, Owen N. Website-delivered physical activity interventions: a review of the literature. *Am J Prev Med.*					X

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2007;33(1):54-64. doi:10.1016/j.amepre.2007.02.041.					
Verhaeghe N, Maeseneer J, Maes L, Heeringen C, Annemans L. Effectiveness and cost-effectiveness of lifestyle interventions on physical activity and eating habits in persons with severe mental disorders: a systematic review. *Int J Behav Nutr Phys Act.* April 2011;8:28. doi:10.1186/1479-5868-8-28.	X				
Verweij LM, Coffeng J, Mechelen W, Proper KI. Meta-analyses of workplace physical activity and dietary behaviour interventions on weight outcomes. *Obes Rev.* 2011;12(6):406-429. doi:10.1111/j.1467-789X.2010.00765.x	X				
Verwey R, van der Weegen S, Spreeuwenberg M, Tange H, van der Weijden T, de Witte L. Upgrading physical activity counselling in primary care in the Netherlands. *Health Promot Int.* 2016;31(2):344-354. doi:10.1093/heapro/dau107.	X				
Vodopivec-Jamsek V, de Jongh T, Gurol-Urganci I, Atun R, Car J. Mobile phone messaging for preventive health care. *Cochrane Database Syst Rev.* 2012;12:Cd007457. doi:10.1002/14651858.CD007457.pub2.				X	
Voskuil VR, Frambes DA, Robbins LB. Effect of physical activity interventions for girls on objectively measured outcomes: a systematic review of randomized controlled trials. *J Pediatr Health Care.* 2017;31(1):75-87. doi:10.1016/j.pedhc.2016.03.003.			X		
Vuillemin A, Rostami C, Maes L, et al. Worksite physical activity interventions and obesity: a review of European studies (the HOPE project). *Obesity Facts.* 2011;4(6):479-488. doi:10.1159/000335255.		X			
Wahi G, Parkin PC, Beyene J, Uleryk EM, Birken CS. Effectiveness of interventions aimed at reducing screen time in children: a systematic review and meta-analysis of randomized controlled trials. *Arch Pediatr Adolesc Med.* 2011;165(11):979-986. doi:10.1001/archpediatrics.2011			X		
Wang Y, Wu Y, Wilson RF, et al. *Childhood obesity prevention programs: comparative effectiveness review and meta-analysis*. AHRQ Comparative Effectiveness Reviews. Report No. 13-EHC081-EF. Rockville, MD: Agency for Healthcare Research and Quality; June 2013.			X		
Ward DS, Welker E, Choate A, et al. Strength of obesity prevention interventions in early care and education settings: a systematic review. *Prev Med*. 2016;95(suppl):S37-S52. doi:10.1016/j.ypmed.2016.09.033.	X				

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Waters E, de Silva-Sanigorski A, Hall BJ, et al. Interventions for preventing obesity in children. *Cochrane Database Syst Rev.* 2011;(12):CD001871. doi:10.1002/14651858.CD001871.pub3.		X			
Webb MJ, Kauer SD, Ozer EM, Haller DM, Sanci LA. Does screening for and intervening with multiple health compromising behaviours and mental health disorders amongst young people attending primary care improve health outcomes? A systematic review. *BMC Fam Pract.* Aug 2016;17:104. doi:10.1186/s12875-016-0504-1.			X		
Weerasekara YK, Roberts SB, Kahn MA, LaVertu AE, Hoffman B, Das SK. Effectiveness of workplace weight management interventions: a systematic review. *Curr Obes Rep.* 2016;5(2):298-306. doi:10.1007/s13679-016-0205-z.	X				
White JL, Ransdell LB, Vener J, Flohr JA. Factors related to physical activity adherence in women: review and suggestions for future research. *Women Health.* 2005;41(4):123-148. doi:10.1300/J013v41n04_07.		X			
White MI, Dionne CE, Warje O, et al. Physical activity and exercise interventions in the workplace impacting work outcomes: a stakeholder-centered best evidence synthesis of systematic reviews. *Int J Occup Environ Med.* 2016;7(2):61-74. doi:10.15171/ijoem.2016.739.		X			
World Health Organization. *Framework for conducting reviews of tuberculosis programmes.* Geneva: WHO Press; 2014.	X				
World Health Organization. *Interventions on diet and physical activity: What works: summary report*. Geneva: WHO Press; 2009.					X
World Health Organization. *Pacific physical activity guidelines for adults: Framework for accelerating the communication of physical activity guidelines.* Geneva: WHO Press; 2008.		X	X		
Wieland SL, Falzon L, Sciamanna CN, et al. Interactive computer-based interventions for weight loss or weight maintenance in overweight or obese people. *Cochrane Database Syst Rev.* 2012;15(8):CD007675. doi:10.1002/14651858.CD007675.pub2.				X	
Williams G, Hamm MP, Shulhan J, Vandermeer B, Hartling L. Social media interventions for diet and exercise behaviours: a systematic review and meta-analysis of randomised controlled trials. *BMJ Open.* 2014;4(2):e003926. doi:10.1136/bmjopen-2013-003926.			X		
Wilson K, Senay I, Durantini M, et al. When it comes to lifestyle recommendations, more is sometimes less: a meta-analysis of theoretical assumptions underlying the effectiveness of	X				

Citation	Outcome	Study Design	Exposure	Not ideal fit for replacement of de novo search	Other
interventions promoting multiple behavior domain change. *Psychol Bull.* 2015;141(2):474-509. doi:10.1037/a0038295.					
Wilson P, Mathie E, Keenan J, et al. Research with Patient and Public involvement: a realist evaluation – the RAPPORT study. *HS&DR.* Sept 2015.		X			
Wolfenden L, Jones J, Williams CM, et al. Strategies to improve the implementation of healthy eating, physical activity and obesity prevention policies, practices or programmes within childcare services. *Cochrane Database Syst Rev.* Oct 2016;10:CD011779. doi:10.1002/14651858.CD011779.pub2.				X	
Woodman J, Thomas J, Dickson K. How explicable are differences between reviews that appear to address a similar research question? A review of reviews of physical activity interventions. *Syst Rev.* Aug 2012;1:37. doi:10.1186/2046-4053-1-37.	X				
World Health Organization. *Global recommendations on physical activity for health.* Geneva: WHO Press; 2010.					X
World Health Organization. *Law, regulation and strategizing for health.* Geneva: WHO Press; 2016.					X
Yamaoka K, Tango T. Efficacy of lifestyle education to prevent type 2 diabetes: a meta-analysis of randomized controlled trials. *Diabetes Care.* 2005;28(11):2780-2786.	X				
Yang L, Sahlqvist S, McMinn A, Griffin SJ, Ogilvie D. Interventions to promote cycling: systematic review. *BMJ.* 2010;341:c5293. doi:10.1136/bmj.c5293.					X
Yildirim M, Stralen MM, Chinapaw MJ, et al. For whom and under what circumstances do school-based energy balance behavior interventions work? Systematic review on moderators. *Int J Pediatr Obes.* 2011;6(2-2):e46-e57. doi:10.3109/17477166.2011.566440.	X				

References

1. Finch M, Jones J, Yoong S, Wiggers J, Wolfenden L. Effectiveness of centre-based childcare interventions in increasing child physical activity: a systematic review and meta-analysis for policymakers and practitioners. *Obes Rev*. 2016;17(5):412–428. doi:10.1111/obr.12392.

2. Mehtala MA, Saakslahti AK, Inkinen ME, Poskiparta ME. A socio-ecological approach to physical activity interventions in childcare: a systematic review. *Int J Behav Nutr Phys Act*. 2014;11(1):22. doi:10.1186/1479-5868-11-22.

3. Physical Activity Guidelines for Americans Midcourse Report Subcommittee of the President's Council on Fitness, Sports & Nutrition. *Physical Activity Guidelines for Americans Midcourse Report: Strategies to Increase Physical Activity Among Youth*. Washington, DC: U.S. Department of Health and Human Services; 2012.

4. Baker PR, Francis DP, Soares J, Weightman AL, Foster C. Community wide interventions for increasing physical activity. *Cochrane Database Syst Rev*. 2015;1:Cd008366. doi:10.1002/14651858.CD008366.pub2.

5. Brown DR, Soares J, Epping JM, et al. Stand-alone mass media campaigns to increase physical activity: a Community Guide updated review. *Am J Prev Med*. 2012;43(5):551–561. doi:10.1016/j.amepre.2012.07.035.

6. Laine J, Kuvaja-Kollner V, Pietila E, Koivuneva M, Valtonen H, Kankaanpaa E. Cost-effectiveness of population-level physical activity interventions: a systematic review. *Am J Health Promot*. 2014;29(2):71–80. doi:10.4278/ajhp.131210-LIT-622.

7. Bopp M, Peterson JA, Webb BL. A comprehensive review of faith-based physical activity interventions. *Am J Lifestyle Med*. 2012;6(6):460–478. doi:10.1177/1559827612439285.

8. Parra MT, Porfírio GJM, Arredondo EM. Physical activity interventions in faith-based organizations: a systematic review. *Am J Health Promot*. 2017. doi:10.1177/0890117116688107.

9. Richards EA, Cai Y. Physical activity outcomes of nurse-delivered lifestyle interventions. *Home Healthc Now*. 2016;34(2):93–101. doi:10.1097/NHH.0000000000000334.

10. Richards EA, Cai Y. Integrative review of nurse-delivered community-based physical activity promotion. *Appl Nurs Res*. 2016;31:132–138. doi:10.1016/j.apnr.2016.02.004.

11. Arsenijevic J, Groot W. Physical activity on prescription schemes (PARS): do programme characteristics influence effectiveness? results of a systematic review and meta-analyses. *BMJ Open*. 2017;7(2):1–14.e012156. doi:10.1136/bmjopen-2016- 012156.

12. Orrow G, Kinmonth AL, Sanderson S, Sutton S. Republished research: effectiveness of physical activity promotion based in primary care: systematic review and meta-analysis of randomised controlled trials. *Br J Sports Med*. 2013;47(1):27. doi:10.1136/bjsports-2012-e1389rep.

13. Attwood S, van Sluijs E, Sutton S. Exploring equity in primary-care-based physical activity interventions using PROGRESS-Plus: a systematic review and evidence synthesis. *Int J Behav Nutr Phys Act*. 2016;13:60. doi:10.1186/s12966-016-0384-8.

14. Bully P, Sanchez A, Zabaleta-del-Olmo E, Pombo H, Grandes G. Evidence from interventions based on theoretical models for lifestyle modification (physical activity, diet, alcohol and tobacco use) in primary care settings: a systematic review. *Prev Med*. 2015;76(suppl):S76–S93. doi:10.1016/j.ypmed.2014.12.020.

15. Denison E, Vist GE, Underland V, Berg RC. Interventions aimed at increasing the level of physical activity by including organised follow-up: a systematic review of effect. *BMC Fam Prac*. 2014;15(1):2–24. doi:10.1186/1471-2296-15-120.

16. Gagliardi AR, Abdallah F, Faulkner G, Ciliska D, Hicks A. Factors contributing to the effectiveness of physical activity counselling in primary care: a realist systematic review. *Patient Educ Couns*. 2015;98(4):412–419. doi:10.1016/j.pec.2014.11.020.

17. Lamming L, Pears S, Mason D; VBI Programme Team. What do we know about brief interventions for physical activity that could be delivered in primary care consultations? A systematic review of reviews. *Prev Med*. 2017;99:152–163. doi:10.1016/j.ypmed.2017.02.017.

18. Melvin CL, Jefferson MS, Rice LJ, et al. A systematic review of lifestyle counseling for diverse patients in primary care. *Prev Med*. 2017;100:67–75. doi:10.1016/j.ypmed.2017.03.020.

19. Morton K, Beauchamp M, Prothero A, et al. The effectiveness of motivational interviewing for health behaviour change in primary care settings: a systematic review. *Health Psychol Rev*. 2015;9(2):205–223. doi:10.1080/17437199.2014.882006.

20. Neidrick TJ, Fick DM, Loeb SJ. Physical activity promotion in primary care targeting the older adult. *J Am Acad Nurse Pract*. 2012;24(7):405–416. doi:10.1111/j.1745-7599.2012.00703.x.

21. Ramoa Castro A, Oliveira NL, Ribeiro F, Oliveira J. Impact of educational interventions on primary prevention of cardiovascular disease: a systematic review with a focus on physical activity. *Eur J Gen Pract*. 2017;23(1):59–68. doi:10.1080/13814788.2017.1284791.

22. Sanchez A, Bully P, Martinez C, Grandes G. Effectiveness of physical activity promotion interventions in primary care: A review of reviews. *Prev Med*. 2015;76(suppl):S56–S67.

23. Pavey TG, Anokye N, Taylor AH, et al. The clinical effectiveness and cost-effectiveness of exercise referral schemes: a systematic review and economic evaluation. *Health Technol Asses*. 2011;15(44):1–254. doi:10.3310/hta15440.

24. Demetriou Y, Honer O. Physical activity interventions in the school setting: a systematic review. *Psychol Sport Exerc*. 2012;13(2):186–196. doi:10.1016/j.psychsport.2011.11.006.

25. Escalante Y, Garcia-Hermoso A, Backx K, Saavedra JM. Playground designs to increase physical activity levels during school recess: a systematic review. *Health Educ. Behav*. 2014;41(2):138–144. doi:10.1177/1090198113490725.

26. Ickes MJ, Erwin H, Beighle A. Systematic review of recess interventions to increase physical activity. *J Phys Act Healt*. 2013;10(6):910–926.

27. Parrish AM, Okely AD, Stanley RM, Ridgers ND. The effect of school recess interventions on physical activity: a systematic review. *Sports Medicine*. 2013;43(4):287–299.

28. Saraf DS, Nongkynrih B, Pandav CS, et al. A systematic review of school-based interventions to prevent risk factors associated with noncommunicable diseases. *Asia Pac J Public Health*. 2012;24(5):733–752. doi:10.1177/1010539512445053.

29. Lonsdale C, Rosenkranz RR, Peralta LR, Bennie A, Fahey P, Lubans DR. A systematic review and meta-analysis of interventions designed to increase moderate-to-vigorous physical activity in school physical education lessons. *Prev Med*. 2013;56(2):152–161. doi:10.1016/j.ypmed.2012.12.004.

30. Mears R, Jago R. Effectiveness of after-school interventions at increasing moderate-to-vigorous physical activity levels in 5- to 18-year olds: a systematic review and meta-analysis. *Br J Sports Med*. 2016;pii:bjsports-2015-094976. doi:10.1136/bjsports-2015-094976.

31. Mozaffarian D, Afshin A, Benowitz NL, et al. American Heart Association Council on Epidemiology and Prevention, Council on Nutrition, Physical Activity and Metabolism, Council on Clinical Cardiology, Council on Cardiovascular Disease in the Young, Council on the Kidney in Cardiovasc. Population approaches to improve diet, physical activity, and smoking habits: a scientific statement from the American Heart Association. *Circulation*. 2012;126(12):1514–1563. doi:10.1161/CIR.0b013e318260a20b.

32. Malik SH, Blake H, Suggs LS. A systematic review of workplace health promotion interventions for increasing physical activity. *Br J Health Psychol*. 2014;19(1):149–180. doi:10.1111/bjhp.12052.

33. Osilla KC, Van Busum K, Schnyer C, Larkin JW, Eibner C, Mattke S. Systematic review of the impact of worksite wellness programs. *Am J Manag Care*. 2012;18(2):e68–e81.

34. Plotnikoff R, Collins CE, Williams R, Germov J, Callister R. Effectiveness of interventions targeting health behaviors in university and college staff: a systematic review. *Am J Health Promot*. 2015;29(5):e169–e187. doi:10.4278/ajhp.130619-LIT-313.

35. To QG, Chen TT, Magnussen CG, To KG. Workplace physical activity interventions: a systematic review. *Am J Health Promot*. 2013;27(6):e113–e123.

36. Torquati L, Pavey T, Kolbe-Alexander T, Leveritt M. Promoting diet and physical activity in nurses. *Am J Health Promot*. 2017;31(1):19–27. doi:10.4278/ajhp.141107-LIT-562.

37. Wong JY, Gilson ND, van Uffelen JG, Brown WJ. The effects of workplace physical activity interventions in men: a systematic review. *Am J Mens Health*. 2012;6(4):303–313. doi:10.1177/1557988312436575.