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Public health interventions for increasing physical activity in children, adolescents and adults: an overview of systematic reviews

Philip RA Baker¹, Maureen Dobbins², Jesus Soares³, Daniel P Francis⁴, Alison L Weightman⁵, Joseph T Costello⁶

¹School of Public Health and Social Work, Institute of Health and Biomedical Innovation, Queensland University of Technology, Kelvin Grove, Australia. ²School of Nursing, McMaster University, Hamilton, Canada. ³Division of Nutrition, Physical Activity and Obesity, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia, USA. ⁴School of Public Health and Social Work, Queensland University of Technology, Brisbane, Australia. ⁵Support Unit for Research Evidence (SURE), Information Services, Cardiff University, Cardiff, UK. ⁶School of Exercise and Nutrition Sciences and Institute of Health and Biomedical Innovation, Queensland University of Technology, Brisbane, Australia

Contact address: Philip RA Baker, School of Public Health and Social Work, Institute of Health and Biomedical Innovation, Queensland University of Technology, Victoria Park Road, Kelvin Grove, Queensland, 4059, Australia. p2.baker@qut.edu.au.

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ABSTRACT

This is the protocol for a review and there is no abstract. The objectives are as follows:

This overview intends to: a) summarise the existing evidence on interventions that aim to increase PA; b) explore whether any effects of the intervention are different within and between populations, and whether these differences form an equity gradient such as an effect that differs according to the advantage/disadvantage (e.g. low income and ethnic minorities); c) highlight gaps in the present evidence base that may warrant a Cochrane systematic review to be completed; and c) identify 'up to date' Cochrane reviews. .

BACKGROUND

Description of the condition

Physical activity (PA) is defined as “any bodily movement produced by the contraction of skeletal muscles that results in an increase in caloric requirements over resting energy expenditure” (Caspersen 1985; ACSM 2013). PA is classified by level of intensity into: very light; light; moderate; and vigorous (both hard

and very hard; ACSM 2013). Daily PA is essential for physical and mental health and general well-being of adults, adolescents, and children (Department of Health and Human Services 2008; WHO 2010; ACSM 2013). The attainment of moderate levels of PA provides many health benefits including a reduced risk of many chronic diseases, particularly cardiovascular disease and type 2 diabetes, and of the risk factors associated with these conditions such as being overweight or obese, high blood pressure and high blood cholesterol (Department of Health and Human Services 2008). All healthy adults aged 18 to 65 years should aim to take part in

at least 150 minutes of moderate intensity aerobic activity each week, or at least 75 minutes of vigorous-intensity aerobic activity per week, or equivalent combinations of moderate- and vigorous-intensity activities (Department of Health and Human Services 2008; O'Donovan 2010; WHO 2010). Children and young people (aged 5 to 17 years) should accumulate at least 60 minutes of moderate-to-vigorous-intensity aerobic activity per day, including vigorous-intensity aerobic activities that improve bone density and muscle strength (Department of Health and Human Services 2008; O'Donovan 2010; WHO 2010).

Despite compelling evidence on the benefits of PA (Department of Health and Human Services 2008; Powell 2011), globally, a third of adults and four-fifths of adolescents do not reach public health guideline-recommended levels of PA (Hallal 2012).

Global efforts to counteract this problem are currently in practice and public health strategies have been adopted to increase the levels of PA in the population (Baker 2011).

Description of the interventions

Interventions that are used to increase PA in general can be differentiated from interventions to increase PA for the treatment of a particular condition, such as arthritis or mental illness. This overview of reviews will include systematic reviews where strategies are employed for the stated purpose to increase PA levels to improve health and well-being of children, adolescents and adults. Interventions that are primarily only intended to treat a condition will be excluded. We will include all interventions for PA within the public health and health promotion context that intend to improve - directly or indirectly - PA at a population level, rather than those targeted solely at individuals with particular disease conditions, with the exception of where the population is described as obese. These interventions may operate at the level of the community, systems, policy and legislation. Generally, these are organized measures (whether public or private) to prevent disease, promote health, and prolong life among the population as a whole (WHO 2014).

A wide-range of interventions has been deployed to try to increase PA levels across the population. These interventions are often designed to modify the social, economic, environmental or cultural factors in which people live to enable PA, and often address issues identified as barriers for PA. It may even be that there is a need for these population-level interventions to enable more individual-focused interventions to work (Lawlor 2003). Community-wide interventions are an example of a type of population-level intervention; these are typically multifaceted, long-term strategies for promoting healthy behaviours in entire populations and addressing the determinants of health. Four specific types of interventions comprise this approach: comprehensive integrated approaches; mass media campaigns; person-focused; and environmental change (Baker 2011). Although these may be presented as a package, they may also be presented as single interventions. PA

interventions may focus on policy, programs, legislation, or other community interventions. Public health interventions can be undertaken in specific settings such as schools and workplaces or may be environmental. Public health interventions may be broad in their reach (such as mass-media campaigns), or may be more specific in their focus, and delivered through groups or directly to individuals.

Adverse effects of the interventions

There is a potential for all interventions to produce unwanted effects beyond reversal of the intended behaviour. This overview will pay particular attention to identifying those for whom the interventions provide benefit, and those whom they disadvantage. Moreover, we will monitor musculoskeletal injury and cardiovascular events associated with these interventions (Foster 2005), as they are often an unintended consequence of increased PA.

How the intervention might work

This overview will examine the effectiveness of various public health interventions to increase PA and will identify a wide range of diverse interventions, determined by the systematic reviews that are available, focusing on PA promotion strategies in the general population. Each intervention approach will have its own mechanism or theory by which it seeks to increase PA.

Why it is important to do this overview

There is strong evidence that physical inactivity, that is, not meeting the minimum PA requirements, increases the risk of many adverse health conditions, including coronary heart disease, type 2 diabetes, and breast and colon cancers, and shortens life expectancy (Lee 2012a). Over the last century a large body of evidence has clearly documented the many health benefits of PA (Warburton 2010). However, despite the positive health effects associated with regular PA, physical inactivity remains a common public health problem in high-, middle-, and low-income countries. Unfortunately, the prevalence of physical inactivity appears to be increasing in many countries (Guthold 2008; Bauman 2009), with low income and ethnic minority adults reporting the lowest rates of PA (Gidlow 2006). There is some evidence to suggest that interventions designed to increase PA can lead to moderate short- and mid-term increases in PA (Foster 2005). However, it is still unclear which is/are the most effective intervention/s (e.g. mass media campaigns, school- or work-based programmes, environmental changes) for increasing PA in adults, adolescents and children from a public health perspective.

Overviews of reviews (overviews) serve the purpose of synthesizing evidence from a number of systematic reviews in health care into a single convenient source for public health policy and practice.

Overviews follow a similar format to systematic reviews, with the exception of summarizing systematic reviews, rather than primary studies. To date, many systematic reviews have been undertaken to determine the effectiveness of interventions for increasing PA. Some of these systematic reviews cover interventions that intend to increase PA levels on a wide-scale (whole population; Baker 2011), whilst others are more individualistic in nature (O'Malley 2012). Furthermore, some reviews have been undertaken with children in specific settings (e.g. school-based interventions; Dobbins 2013). Currently, there is no Cochrane overview that consolidates the range of intervention strategies covered by single reviews. Therefore, an overview is necessary to examine the evidence and to identify which interventions increase PA, in order to provide a convenient resource for public health policy makers, public health practitioners, and community members (Baker 2014). A number of 'best buys for PA' have been stated through consensus or advocacy, however the evidence base for their recommendations is uncertain and contradicts evidence from current systematic reviews. Therefore, this overview will examine the effectiveness of various public health interventions to increase PA and highlight gaps in the present evidence base that warrant the production of new systematic reviews.

The proposed overview aims to provide an up to date overview of available strategies for increasing PA in the medium-term (three months to three years) and long-term (more than three years), and for overall health and well-being, rather than as a treatment modality for a particular condition or disease, and to provide a important resource for health decision makers.

OBJECTIVES

This overview intends to: a) summarise the existing evidence on interventions that aim to increase PA; b) explore whether any effects of the intervention are different within and between populations, and whether these differences form an equity gradient such as an effect that differs according the advantage/disadvantage (e.g. low income and ethnic minorities); c) highlight gaps in the present evidence base that may warrant a Cochrane systematic review to be completed; and c) identify 'up to date' Cochrane reviews. .

METHODS

Criteria for considering reviews for inclusion

Types of reviews

We will include systematic reviews of randomised controlled trials (RCTS), cluster randomised controlled trials, controlled before-and-after studies, and interrupted time series.

Higgins described a systematic review as being characterised as having (Higgins 2011):

- a clearly stated set of objectives with pre-defined eligibility criteria;
- an explicit, reproducible methodology;
- a systematic search that attempts to identify all studies that would meet the eligibility criteria;
- an assessment of the validity of the findings of the included studies, such as risk of bias assessment;
- a systematic presentation, and synthesis, of the characteristics and findings of the included studies.

We will include reviews that meet a minimum methodological level of strength in their conduct, rated by the Health Evidence Quality Assessment Tool (HE QAT) by Health Evidence as strong (score of 8 to 10; Dobbins 2010). The use of HE QAT will identify systematic reviews of adequate reliability from which an overview of systematic reviews can be constructed. This approach is similar, but more inclusive than that used by many Cochrane overviews, which only include Cochrane reviews.

Types of participants

We will include interventions for children, adolescents and adults, and those described more broadly by the authors as community or population interventions. Current PA guidelines specify recommendations for different age groups of children and also differentiate between adults (18 to 64 years) and older adults (over 65 years). Therefore, all ages in terms of participants will be included, and we will consider grouping evidence based upon the following ranges:

- children 5 to 12 years;
- adolescents 13 to 17 years;
- adults 18 years or older.

The definitions of these age categories are expected to vary between the included reviews, due to known differences arising from inconsistent use in national guidelines.

Types of interventions

We will include systematic reviews that evaluate any intervention or combination of interventions that are designed to modify medium- to long-term outcomes of PA behaviours of children, adolescents, and adults. Reviews will be included where these interventions have been compared with either control interventions (such as standard community practice, or placebo) or with another type of intervention aiming to increase PA or reduce sedentary behaviour.

We will include all interventions for PA within the public health and health promotion context that intend to improve - directly

or indirectly - PA at a population level, rather than those targeted solely at individuals with particular disease conditions, with the exception of where the population is described as obese. These interventions may operate at the level of the community, systems, policy and legislation, and may target individuals within the population.

We will exclude systematic reviews on people presenting with specific conditions or co-morbidities if the intervention is primarily focused on a medical diagnosis, unless the constituents of a community or population are described as being overweight and obese.

Types of outcomes

We expect to identify a mixture of continuous and dichotomous outcome measures that are included in the systematic review where the outcome is measured at a minimum of 12 weeks from the start of intervention. Population level measures of PA as reported in the primary studies and summarised in the systematic review will be included in the overview.

Primary outcome measures

- Proportion of the population achieving moderate to vigorous physical activity assessed through self-reported measurements or the use of pedometers or accelerometers. At a population level the results may be expressed as proportion of active and inactive people including those meeting national recommendations in which the study was undertaken, and arbitrary measures such as the attainment of the equivalent of 10,000 steps daily (Tudor-Locke 2004).

- Duration of PA measured through self-reported measurements or pedometers or accelerometer data.
- Data on sedentary behaviour(i.e. time spent sitting or physically inactive) will also be included.
- Adverse events such as musculoskeletal injury and cardiovascular events associated with these interventions, as reported in the reviews.

Secondary outcome measures

- Television viewing (TV viewing; time spent watching television).
- Body mass index (BMI).

Outcomes may also be reported at an individual level when the unit of allocation is a person rather than a community.

In addition, it will be important to identify any comments made by the review authors regarding process evaluations and descriptions of the strategies of the included studies to understand the reach and impacts of the interventions.

Search methods for identification of reviews

We will follow a three part selection process to identify high quality reviews meeting the inclusion criteria.

Firstly, we will search and screen the Cochrane Database of Systematic Reviews (CDSR).

Secondly, we will search and screen HealthEvidence.org for reviews that have been pre-assessed as 'strong' (having been rated 8 to 10) with the Health Evidence Quality Assessment Tool (Dobbins 2010; Health Evidence 2013a), and tagged with 'physical activity'. The Health EvidenceTM Registry of Reviews (<http://healthevidence.org/>) will be the first means of identifying both Cochrane and non-Cochrane systematic reviews up to the date of the last completed search and screening process. This database will be useful because it collates references of quality-rated systematic reviews (currently more than 4000) evaluating the effectiveness of public health interventions. The Health Evidence Registry of Reviews undertakes ongoing searches with validated filters (Lee 2012), handsearching and reference list searching (Dobbins 2010); and compiles relevant public health reviews into a searchable database available via an externally available web platform (for the general public), and also 'behind firewall' fully searchable database platform. Thus, by searching this database we intend to eliminate unnecessary duplication of searching and screening of individual databases within the period of time covered by the searches.

Thirdly, we will search the same bibliographic databases with the same methodological filters as the HealthEvidence.org search strategy (<http://www.healthevidence.org/our-search-strategy.aspx>), combined with a physical activity/sedentary behaviour filter, for reviews published in the most recent six months. See Appendix 1 for details. Although the Health Evidence Registry of Reviews searches are carried out once a month, this will ensure that no recent reviews are missed as a result of the time taken for reviews identified to be appraised and uploaded to HealthEvidence.org.

In this third part of the process we will search the following seven databases:

- MEDLINE;
- EMBASE;
- CINAHL;
- PsycINFO;
- BIOSIS;
- SPORTDiscus;
- Sociological Abstracts.

We will combine the HealthEvidence.org systematic review filter and the physical activity/sedentary behaviour filters as follows (using as an example a search of MEDLINE (Ovid)):

MEDLINE.tw OR systematic review.tw OR meta-analysis.pt OR intervention\$.ti.

AND

walking/ OR physical fitness/ OR exercise/ OR (fitness adj

class*).ti,ab. OR gardening/ OR exp “physical education and training”/ OR dancing/ OR exp sports/ OR yoga/ OR fitness centers/ OR recreation/ OR (fitness adj (regime* or program*)).ti,ab. OR (led walk* or health walk*).ti,ab. OR (physical adj5 (fit* or train* or activ* or endur*)).ti,ab. OR ((leisure or fitness) adj5 (centre* or center* or facilit*)).ti,ab. OR ((promot* or uptak* or encourag* or increas* or start* or adher* or sustain* or maintain*) adj5 gym*).ti,ab. OR ((promot* or uptak* or encourag* or increas* or start* or adher* or sustain* or maintain*) adj5 (circuit* or aqua*)).ti,ab. OR ((promot* or uptak* or encourag* or increas* or start* or adher* or sustain* or maintain*) adj5 (exercis* or exertion or keep fit or fitness class or yoga or aerobic*)).ti,ab. OR ((decreas* or reduc* or discourag*) adj5 (sedentary or deskbound or “physical* inactiv*”).ti,ab. OR sport*3.ti,ab. OR walk*3.ti,ab. OR running.ti,ab. OR jogging.ti,ab. OR pilates.ti,ab. OR yoga.ti,ab. OR ((cycle or cycling) adj5 (school* or work or workplace or commut* or travel* or equipment or facility* or rack*1 or store*1 or storing or park* or friendly or infrastructure)).ti,ab. OR bicycl*.ti,ab. OR (bike*1 or biking).ti,ab. OR (swim*1 or swimming).ti,ab. OR (exercis*3 adj5 aerobic*).ti,ab. OR rollerblading.ti,ab. OR roller-skating.ti,ab. OR skating.ti,ab. OR travel mode*1.tw. OR (active adj (travel*4 or transportation or commut*)).tw. OR (multimodal transportation or alternative transport* or alternative travel*).ti,ab. OR recreation*1.ti,ab. OR (“use” adj3 stair*).ti,ab. OR (pedestrianis* or pedestrianiz*).ti,ab.

Supplementary search methods (contact with experts in the field and citation tracking of included reviews) will also be employed to maximise the sensitivity of the search strategy for recent high quality reviews.

Data collection and analysis

Selection of reviews

Our screening and selection process will follow three steps.

1) We will design the initial search strategy for sensitivity for PA and sedentary behaviour from amongst the databases of systematic reviews. After de-duplication we will undertake initial screening by reading the title and abstracts of all references to identify whether the review is potentially within the scope of the intervention approach and outcome (having the purpose and measurement of PA). We will undertake an initial screening of titles and abstracts to remove those reviews that are obviously outside the scope of the overview. We will exclude reviews identified by the Health Evidence Registry of Reviews that are deemed to be within scope, but were assessed as ‘moderate’ (score 5 to 7) or ‘weak’ (1 to 4) by HE QAT (Dobbins 2010), as we are limiting our search strategy to ‘strong’ reviews (scoring 8 to 10). Reviewers will be inclusive and, if in doubt, reviews will be left in at this stage.

2) We will retrieve the full text for those reviews that potentially meet the inclusion criteria (based on the title and abstract only). All

full text reviews obtained will be screened by two review authors (PB or MD, and the remainder of the team) to assess whether the permissible intervention and review designs are fully met. Where there is a persisting difference of opinion, a third reviewer will review the paper in question and a consensus will be reached between the three review authors.

We will assess publications identified by the primary searches for relevance using the Health EvidenceTM Relevance tool for review articles as a pre-screening step consistent with Health Evidence methodology (Health Evidence 2013b).

3) We will map the potentially eligible studies to class the interventions and determine the priority for inclusion to minimise irrelevance and duplication of systematic reviews when there is potential overlap.

We will sort the results of the search strategy and group the systematic reviews according to the interventions studied (such as school-based, behaviour, incentives, mass media, community-wide etc.). We recognised that currently there are no criteria available to map systematic reviews of public health interventions for inclusion in a Cochrane overview.

After initial grouping, we will map the systematic reviews according to the strength of the included evidence, recency and breadth (the range of interventions included). When there is more than one systematic review covering the intervention approach, we will base the decision for inclusion upon the criteria which at this point are: 1) recency (giving preference to the most recent systematic review), 2) HE QAT score, 3) completeness of outcome measures of PA, and 4) types of interventions included for PA. We will ask whether an older systematic review of similar strength provides more information than a more current systematic review. We will include an older systematic review along with a newer systematic reviews when the older review covers an important intervention approach or contains important studies that have not been identified in the most recent systematic review.

To summarise, for each class or type of intervention for the outcome (e.g. school-based interventions for PA), we will select the most important and highest quality reviews that most completely describe the intervention and the outcomes of this overview and avoid overlap in order to summarise succinctly the current body of evidence from trustworthy systematic reviews. We aim to use the fewest number of reviews required to summarise the intervention approach.

It may be possible that an older Cochrane review may not be included if a more current review of a similar methodological strength covers the same types of interventions and additional studies. If in doubt, we will include both reviews. The mapping process will be undertaken by PB and JS, and then reviewed by DF, JC and MD.

Our search is limited to systematic reviews from 2004 to the present to focus on the most current evidence, given that recent reviews are likely to be more representative of the current body of evidence than older reviews.

Data extraction and management

We will extract data from all the reviews that meet the inclusion criteria. For each review, two review authors (PB and shared between DF, JC, JS) will independently complete data extraction forms that will be tailored to the requirements of this overview. The forms will include study designs incorporated in the individual reviews, and note whether various study types were combined in a meta-analysis. The most robust measures of PA will be extracted when the review reports several measures of PA. We will not re-analyse data presented in the systematic reviews, although we will note any problems we identify. We will extract information about the countries included in the reviews (e.g. low- or middle-income). We will note whether the reviews have reported evidence describing priority populations such as priority ethnicity, indigenous populations and low income populations for health equity. We will extract information regarding the sources of funding, cost of the interventions and any sustainability or implementation data available.

Assessment of methodological quality of included reviews

Quality of included reviews

We will use the HE QAT to assess the methodological quality of all included reviews (Health Evidence 2013a). For reviews located within the Health Evidence Registry of Reviews, we will use the existing score provided by Health Evidence. These reviews will not be reassessed, since they were independently assessed by two reviewers under the supervision of one of our reviewers (MD). The HE QAT assesses 10 criteria to measure the extent to which the methodological approach of a review guarded against bias. The reviewers have chosen not use to AMSTAR (Shea 2009), a critical appraisal tool commonly used for clinical studies, although is rarely used in overviews of public health interventions (Baker 2014). Overviews identified beyond the time covered by Health Evidence will be referred to Health Evidence who will appraise the newly identified reviews critically with the HE QAT and include them in the registry. Where we identify studies that show limitations that are important enough to make the findings of the review unreliable, we will not include the review in the overview. For this reason, we have selected 'strong' reviews (rated from 8 to 10) during the search process to exclude these reviews.

Quality of evidence in included reviews

Cochrane intervention reviews typically use excellent methods that may summarise evidence with important limitations, because of potential biases within - and across - the included studies. Where possible and appropriate, Cochrane reviews are required to use GRADE in the 'Summary of findings' table (Guyatt 2008). Where

the evidence provided by the included systematic reviews has been assessed by GRADE, the review authors' GRADE assessments will be presented with the results, and used in interpretation of the results. Where included reviews have not used GRADE, we will use the assessment of the quality of the evidence of the primary studies that was used in each review. Given the overview will use only strong reviews as assessed by HE QAT, we expect that assessment of the primary studies will have been completed more thoroughly than if we had decided to include poorer quality reviews.

Data synthesis

The data synthesis will build upon the mapping and selection described in the Selection of reviews. We will use descriptive statistics to report the efficacy of a variety of public health interventions that subsequently will be grouped into the following broad categories: population; community; individual, systems; and policy and legislation. We will also assemble included systematic reviews into intervention groups, and then prioritised them by date, quality and relevance.

We will consider all of the available data in the included reviews. For each included systematic review we will prepare a table summarizing what the review authors searched for and what they found. We will construct summary tables from the extracted data for, at a minimum, our main outcomes of PA, time spent in PA and number of people physically active. Depending on availability of data, we will synthesise outcomes in the medium-term (three months to three years) and long-term (more than three years). If individual reviews have included other outcomes of BMI and TV viewing (a proxy for sedentary behaviour), we may also present these. Furthermore, we will summarise any unwanted effects such as reversal of the intended behaviour, musculoskeletal injury, cardiovascular events. We will also report any identified differences in outcomes that are reported in the systematic reviews by age, gender, ethnicity and any categories noting disadvantage or priority.

We will make comparisons between the intervention's aim (PA or sedentary behaviour or both), age groups (children and adults), any specified theoretical framework and the context. In the summary we will describe whether the review's findings are potentially useful for disadvantaged populations by reporting the range of application and effects in priority populations such as priority ethnicity, indigenous populations and low income populations for health equity. We will explore the existence of an equity gradient, and the cost and sustainability of the interventions. Where the review authors have provided adequate information, we will describe the effect of the intervention when delivered in low- and middle-income countries.

We will take into account other relevant considerations besides the findings of the included reviews when drawing conclusions about implications for practice (EPOC 2013). This includes considerations related to the applicability of the findings and likely impacts on equity. Our conclusions about implications for systematic re-

views will be based on types of delivery arrangements for which we were unable to find a reliable, up to date review and limitations identified in the included reviews. Our conclusions about implications for future evaluations will be based on the findings of the included reviews (EPOC 2013).

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* Indicates the major publication for the study

APPENDICES

Appendix I. Health EvidenceTM Search Strategy

The Health EvidenceTM Search Strategy (a systematic review filter combined with public health terms) searches seven bibliographic databases:

- MEDLINE
- EMBASE
- CINAHL
- PsycINFO
- BIOSIS
- SPORTDiscus
- Sociological Abstracts

All databases have been searched from 1995 to present. For MEDLINE, EMBASE, CINAHL and PsycINFO, methodological search filters described below are used to retrieve systematic reviews, meta-analyses and metasynteses that evaluate the effectiveness of public health interventions.

MEDLINE systematic review filters

Health EvidenceTM Systematic review methodology filter

1. MEDLINE.tw.
2. systematic review.tw.
3. meta-analysis.pt.
4. intervention\$.ti
5. or/1-4

Health EvidenceTM: Public health content filter

1. exp health promotion/
2. exp health education/
3. exp primary prevention/
4. exp preventive health services/
5. exp education/
6. prevention.mp.
7. exp community health services/
8. exp public health/
9. or/1-8
10. (systematic.mp OR meta analysis/ OR review/)
11. 9 and 10

EMBASE systematic review filters

Health EvidenceTM Systematic review filter

1. MEDLINE.tw.
2. exp systematic review/ or systematic review.tw
3. meta-analysis/
4. intervention\$.ti
5. or/1-4

Health EvidenceTM Public Health filter

1. exp health promotion/
2. exp health education/
3. exp primary prevention/
4. exp preventive health services/
5. exp education/
6. exp public health/
7. exp prevention/
8. exp community care/
9. exp community medicine/
10. or/1-9
11. systematic review.mp.
12. meta analysis/
13. review/
14. or/ 11-13

(Continued)

15. 10 and 15

CINAHL systematic review filters

Health EvidenceTM Systematic review filter

1. MEDLINE.tw.
2. exp systematic review/ or systematic review.tw
3. meta analysis/
4. intervention\$.ti
5. or/1-4

Health EvidenceTM Public Health filter

1. exp health promotion/
2. exp health education/
3. primary prevention.mp.
4. exp public health/
5. exp community health services/ or exp preventive health care/
6. prevention.mp.
7. exp education/
8. or/1-7
9. exp Meta Analysis/ or exp systematic Review/ or review.pt
10. 8 and 9

Reference: Lee, Edwin, et al. "An optimal search filter for retrieving systematic reviews and meta-analyses." *BMC medical research methodology* 12.1 (2012): 51. [Lee 2012](#)

Health EvidenceTM screens the Cochrane Library for new, updated and withdrawn reviews. Health EvidenceTM also receives and screens the following evidence services: National Collaborating Centre for Methods and Tool's PublicHealth+; Knowledge Translation+; Best Evidence for Nursing+; MacPLUS Federated Search; Health Systems Evidence.

Reference list search

- search the reference lists of all published reviews identified as relevant.

Searches are updated monthly. To date, over 1,260,000 titles have been screened.

Source: <http://www.healthevidence.org/our-search-strategy.aspx>

CONTRIBUTIONS OF AUTHORS

All of the authors contributed to the drafting and revising of the protocol.

DECLARATIONS OF INTEREST

Some of the overview authors are CPHG editors (PB, DF & MD) or authors of potentially relevant reviews. ALW, PB, DF & JS are authors on the review of community wide interventions for increasing PA (Baker 2011). MD is author on the review of school-based interventions for PA (Dobbins 2013) and director of Health Evidence. PB & DF are authors on the review of Incentive-based interventions for increasing PA and fitness (O'Malley 2012).

Philip RA Baker: CPHG editor, author on the reviews of Community wide interventions for increasing PA (Baker 2011), and Incentive-based interventions for increasing PA and fitness (O'Malley 2012)

Maureen Dobbins: CPHG editor, Director of Health Evidence, author on the review of school-based interventions for PA (Dobbins 2013)

Jesus Soares: author on a review of community wide interventions for increasing PA (Baker 2011)

Daniel P Francis: CPHG editor, author on the reviews of community wide interventions for increasing PA (Baker 2011), and Incentive-based interventions for increasing PA and fitness (O'Malley 2012)

Alison L Weightman: author on a review of community wide interventions for increasing PA (Baker 2011)

Joseph T Costello: nothing to declare

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External sources

- No sources of support supplied