



REVIEW ARTICLE

# Physical activity and nutrition education at the school environment aimed at preventing childhood obesity: evidence from systematic reviews<sup>☆</sup>



Paulo Henrique Guerra<sup>a,b,\*</sup>, Jonas Augusto Cardoso da Silveira<sup>c</sup>,  
Emanuel Péricles Salvador<sup>b,d</sup>

<sup>a</sup> Escola de Artes, Ciências e Humanidades, Universidade de São Paulo (USP), São Paulo, SP, Brazil

<sup>b</sup> Grupo de Estudos e Pesquisas Epidemiológicas em Atividade Física e Saúde (GEPAF), Universidade de São Paulo (USP), São Paulo, SP, Brazil

<sup>c</sup> Department of Pediatrics, Universidade Federal de São Paulo (USP), São Paulo, SP, Brazil

<sup>d</sup> Department of Physical Education, Universidade Federal do Maranhão (UFMA), São Luís, MA, Brazil

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## KEYWORDS

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Children;  
Physical activity;  
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Overweight;  
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## Abstract

**Objective:** To organize the main findings and list the most frequent recommendations from systematic reviews of interventions developed at the school environment aimed at reducing overweight in children and adolescents.

**Data source:** Searches for systematic reviews available until December 31, 2014 were conducted in five electronic databases: Cochrane, PubMed, SciELO, SPORTDiscus, and Web of Science. Manual search for cross-references were also performed.

**Summary of the findings:** Of the initial 2139 references, 33 systematic reviews adequately met the inclusion criteria and were included in the descriptive summary. In this set, interventions with periods of time greater than six months in duration (nine reviews), and parental involvement in the content and/or planned actions (six reviews) were identified as the most frequent and effective recommendations. Additionally, it was observed that boys respond more effectively to structural interventions, whereas girls respond to behavioral interventions. None of the included reviews was able to make inferences about the theoretical basis used in interventions as, apparently, those in charge of the interventions disregarded this component in their preparation.

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\* Corresponding author.

E-mail: paulohguerra@usp.br (P.H. Guerra).

**PALAVRAS-CHAVE**

Revisão;  
Crianças;  
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Sobrepeso;  
Escola

*Conclusions:* Although the summary identified evidence with important applications in terms of public health, there are still gaps to be filled in this field of knowledge, such as the effectiveness of different theoretical models, the identification of the best strategies in relation to gender and age of participants and, finally, the identification of moderating variables to maximize the benefits provided by the interventions.

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### A atividade física e a educação nutricional no ambiente escolar visando a prevenção da obesidade infantil: evidências de revisões sistemáticas

**Resumo**

*Objetivo:* Organizar os principais achados e elencar as recomendações mais frequentes das revisões sistemáticas de intervenções desenvolvidas no ambiente escolar com fins na redução do excesso de peso em crianças e adolescentes.

*Fonte dos dados:* Buscas por revisões sistemáticas disponíveis até 31 de Dezembro de 2014 foram realizadas em cinco bases de dados eletrônicas: Cochrane, PubMed, SciELO, SPORTDiscus, e Web of Science. Buscas manuais por referências cruzadas também foram desenvolvidas.

*Síntese dos dados:* Das 2.139 referências iniciais, 33 revisões sistemáticas responderam adequadamente aos critérios de inclusão e compuseram a síntese descritiva. Neste conjunto, identificou-se como recomendações mais frequentes e efetivas intervenções que possuem períodos de tempo superior a seis meses de duração (9 revisões), e o envolvimento dos pais nos conteúdos e/ou ações previstas (6 revisões). Além disso, observou-se que meninos respondem de forma mais efetivas as intervenções estruturais enquanto as meninas às intervenções comportamentais. De modo consistente entre as revisões incluídas, nenhuma delas conseguiu realizar inferências sobre a base teórica utilizada nas intervenções, uma vez que, aparentemente, os responsáveis pelas intervenções desconsideraram esse componente em sua elaboração.

*Conclusões:* Embora a síntese tenha identificado evidências com aplicações importantes em termos de saúde coletiva, ainda existem lacunas a serem preenchidas nesse campo do conhecimento, tais como a efetividade de diferentes modelos teóricos, o reconhecimento das melhores estratégias em relação ao sexo e a idade dos participantes e, por fim, a identificação de variáveis moderadoras para potencializar os benefícios proporcionado pelas intervenções.

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**Introduction**

In children and adolescents, the high prevalence of overweight observed in different parts of the world<sup>1</sup> has reinforced the need to implement new preventive strategies, highlighting the important role of physical activity (PA) and nutrition education (NE).<sup>2</sup>

Researchers and health professionals agree on the school's potential as a favorable place for the development of interventions that involve practices and contents in PA and/or NE, considering some advantages offered by this environment, for instance, the scope of actions; the large number of students receiving the same stimulus at the same time; the continuity of the strategies over time, due to the permanence of children and/or adolescents in schools; and the possibility of both structural and operational changes.<sup>2-4</sup>

As a result of this consensus, the scientific literature has received reports of a large number of interventions developed in the school environment with the purpose of preventing and/or reducing child obesity after the early 2000s,<sup>5</sup> which favored the development of the first systematic reviews on the subject.<sup>6-8</sup> However, apart from the

associated goals, it is noteworthy that these reviews have conflicting and inconclusive results, mostly due to the great variability of the methods employed in the original publications (e.g., theoretical basis, time of duration, actions developed), as well as due to the type and number of assessed studies.<sup>5,9</sup>

Aiming to correct these uncertainties, other systematic reviews were conducted, seeking to provide plausible explanations for the high variability among the original results,<sup>10-12</sup> increasing the number of correlated reviews with discordant results, which probably has limited their acceptance in practice, as well as their implementation as public policy. Conversely, while the debate on the inconclusive results of these reviews was expanded, the confirmation of the common evidence of these reviews was relegated to the background. In practical terms, for school professionals, these evidence could guide the design and implementation of new interventions, aimed at preventing childhood overweight.

By retrieving correlated systematic reviews, this study aimed to organize the main findings and list the most frequent recommendations from systematic reviews of

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