

**Efficacy of family and school-based interventions on children and adolescents obesity : A systematic review and meta-analysis**

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**ADMINISTRATIVE INFORMATION****Support** - None.**Review Stage at time of this submission** - Preliminary searches.**Conflicts of interest** - None declared.**INPLASY registration number:** INPLASY202460118**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 28 June 2024 and was last updated on 01 July 2024.**INTRODUCTION**

**Review question / Objective** The main objective of this review is to identify the efficacy of family-and school-based interventions that target overweight or obesity in children and adolescents aged 18years and under.The review intends to compare and summarize existing systematic reviews of experimental studies that address a range of family- and school-based physical activity interventions for overweight children. The second objective of this review is to identify strategies that are effective in improving children's body weight or body mass index and, where applicable, changes in child/family/school behavior, including dietary intake or physical activity.

The review questions are as follows:

What is the effectiveness of family and school based behavioral or lifestyle weight management interventions for overweight children?

What are the strategies or characteristics of effective interventions in combating child obesity?

**Condition being studied** The rising prevalence of childhood obesity has created a worldwide public health crisis.This review aims to identify the effectiveness of family and school based interventions that target overweight or obesity in children aged 18 years and under.The second objective of this review is to identify strategies that are effective in improving children's body weight or body mass index and, where applicable, changes in child/family/school behavior, including dietary intake or physical activity.

**METHODS**

**Participant or population** Children and adolescents aged 18 years and under.

**Intervention** This review will include reviews considering family-and school-based behavioral or lifestyle interventions for child weight management.Interventions that involve parents only ,the parent and child separately , the parent and child together or school settings.Interventions of interest are those that aim for weight loss as a

primary outcome through changes to behavioral or lifestyle habits, including ,but not limited to, dietary intake, physical activity, sedentary behavior, mealtime patterns and sleep.Comparison groups may include usual care, other interventions or no intervention control.

**Comparator** Control conditions (passive control).

**Study designs to be included** Only randomized controlled trials will be included in this study.

#### Eligibility criteria

- (1)children aged 18 years and under;
- (2)we will include the literature of randomized controlled trials(RCTs) ;
- (3) interventions within family and school;
- (4) school- and family-based obesity prevention programme.

Exclusion criteria:

- (1)children and adolescents with some type of injury,chronic or acute illness, overweight or obesity;
  - (2) Other physiological or physical conditions not related to the included results;
  - (3)Other study designs that do not allow within-subjects comparisons for the conditions;
- Written in a language other than English. Other types of articles in addition to the original (e.g., reviews, letters to the editors, trial records, protocol proposals,editorials, book chapters, and conference abstracts.

**Information sources** Electronic databases(PubMed, Scopus, Embase, Cochrane Library and Web of Science) were searched for relevant publications prior to 1 July 2024.

**Main outcome(s)** The primary outcome of interest is children's body weight or BMI.Existing reviews that reported synthesis of children's body weight or BMI change,measured from baseline to intervention-end or post-intervention follow-up,will be considered for this review.Where available,"behavior change" such as dietary intake or physical activity may be included as secondary outcomes of interest.

**Quality assessment / Risk of bias analysis** The quality assessment standard for a cross-over study was used. This tool assesses nine items: (1) appropriate cross-over design; (2) randomized treatment order; (3) carry-over effect; (4) unbiased data; (5) allocation concealment; (6) blinding; (7)incomplete outcome data; (8) selective outcome reporting; and (9) other bias. A possible scoring of low, unclear, and high can be provided by each item.

**Strategy of data synthesis** The meta-analysis of data from included outcomes will be performed using the RevMan V.5.4.1,and we will choose a randomized or fixed effect model for data statistics according to the results of the heterogeneity test. The enumeration data were expressed as relative risk (RR) ,and the weight mean difference (WMD) was used as the measurement data; each effect amount was expressed in 95% confidence interval (CI). The specific methods were as follows: If the heterogeneity was low (I2<50%), the random-effects model will be used for data synthesis after excluding possible heterogeneity sources. The investigation methods included subgroups and sensitivity analyses. If data cannot be synthesized, we provide a descriptive analysis to solve this problem.

**Subgroup analysis** Age; sex.

**Sensitivity analysis** To test the stability and reliability of the results of this study, we conducted a sensitivity analysis according to the following points: method quality, sample size,and missing data.After that, we will perform a data analysis again and compare the results.If there was no directional change after the sensitivity analysis, the results were stable.

**Language restriction** English.

**Country(ies) involved** China.

**Keywords** Child obesity; family; school; intervention; RCT.

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