

INPLASY

Effects of exercise intervention on executive function in overweight and obesity children: A systematic review and meta-analysis

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ADMINISTRATIVE INFORMATION

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Review Stage at time of this submission - Preliminary searches.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 11 July 2024 and was last updated on 25 September 2024.

INTRODUCTION

Review question / Objective The incidence of childhood overweight and obesity is increasing year by year, and childhood overweight and obesity leads to reduced executive function, therefore, the efficacy of exercise interventions to improve executive function in overweight and obese children has received increasing attention, and the purpose of this systematic evaluation is to accurately evaluate the efficacy of exercise interventions on executive function in overweight and obese children.

P: Overweight children or obese children

I: exercise intervention

C: non-motorized intervention

O: executive function (inhibitory control, working memory, Cognitive flexibility).

Condition being studied The incidence of childhood overweight and obesity is increasing year by year, and childhood overweight and obesity leads to reduced executive function,

therefore, the efficacy of exercise interventions to improve executive function in overweight and obese children has received increasing attention, and the purpose of this systematic evaluation is to accurately evaluate the efficacy of exercise interventions on executive function in overweight and obese children.

METHODS

Participant or population Overweight children or obese children.

Intervention Exercise intervention.

Comparator regular activity, non-exercise intervention, or no intervention.

Study designs to be included RCT or intervention study or longitudinal study or cohort study or prospective.

Eligibility criteria Inclusion criteria:

- 1、The type of study must be an RCT or intervention study or longitudinal study or cohort study or prospective study
- 2、Study subjects must be overweight or obese children

Exclusion criteria:

- 1、Very small sample size
- 2、Children who are not overweight or obese
- 3、Unable to access full text to extract valid ending data.

Information sources PubMed、embase、Cochrane、WOS.

Main outcome(s) Inhibitory control, working memory, cognitive flexibility, and attention.

Data management

EndNote:

- Step 1: Eliminate duplicate literature
- Step 2: Reading the Title and Abstract Initial Screening of Literature
- Step 3: Read the full text to further screen the literature
- Step 4: Include the remaining literature in the Meta-analysis.

Quality assessment / Risk of bias analysis
Cochrane TOOL.

Strategy of data synthesis Heterogeneity was present, random effects were chosen to combine the data; fixed effects were chosen to combine the data in the absence of heterogeneity.

Subgroup analysis Subgroup analysis was based on factors such as exercise time, exercise type and exercise intensity.

Sensitivity analysis After deleting any of them, the combined results of the rest of the literature are not much different from what they would have been without deletion, which means that the sensitivity analysis has been passed.

Country(ies) involved China.

Keywords Exercise intervention, Executive function, Overweight children, Obesity children, Meta-analysis.

Contributions of each author

- Author 1 - Wang PENGfei.
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Author 3 - Xing KAllin.