

INPLASY PROTOCOL

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None declared.

Effects of blood flow restriction training on physical fitness among athletes: a systematic review and meta-analysis

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Review question / Objective: The objective of this study is to examine the effects on physical fitness (strength, speed, agility, endurance and balance) in various categories of healthy athletes and their control group before and after blood flow restriction training, and the study design is an RCT or a non-RCT.

Condition being studied: Using different pressure, cuff material and cuff size to the proximal part of the athlete's upper or lower limb, to review the effect of blood flow restriction combined with various training methods on the physical fitness of healthy athletes.

Eligibility criteria: Exclusion Criteria: Athletes with health problems and Interference factors (e.g., injuries, neuromuscular or cardiovascular diseases, consuming caffeine or alcohol), without BFR, single-group trials, no physical fitness data, no pre-test and post-test.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 09 February 2023 and was last updated on 05 December 2023 (registration number INPLASY202320040).

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INTRODUCTION

Review question / Objective: The objective of this study is to examine the effects on physical fitness (strength, speed, agility, endurance and balance) in various categories of healthy athletes and their control group before and after blood flow

training methods on the physical fitness of healthy athletes.

METHODS

Participant or population: Healthy athletes.

Intervention: Blood flow restriction training(BFR combined with other forms of training).

Comparator: Two-group or multi-group trials.

Study designs to be included: RCT or Non-RCT.

Eligibility criteria: Exclusion Criteria: Athletes with health problems and Interference factors (e.g., injuries, neuromuscular or cardiovascular diseases, consuming caffeine or alcohol),without BFR,single-group trials,no physical fitness data,no pre-test and post-test.

Information sources: PubMed,Web of Science, EBSCOhost, SCOUPS, Google Scholar.

Main outcome(s): At least one measure related to physical fitness (e.g., strength, power, speed, endurance, agility, flexibility, balance, body composition).

Quality assessment / Risk of bias analysis: Physiotherapy Evidence Database (PEDro) scale ratings.

Strategy of data synthesis: Systematic review.

Subgroup analysis: Healthy athletes with at least 1 year of training experience and no blood flow restriction interventions during training.

Sensitivity analysis: No Sensitivity analysis.

Language restriction: English.

Country(ies) involved: China, Malaysia.

Keywords: blood flow restriction; physical fitness; athletes.

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