

INPLASY PROTOCOL

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Effects of upper limb strength training on climbing performance in health individuals: A systematic review and metanalysis

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Review Stage at time of this submission: Preliminary searches.

Conflicts of interest:
None declared.

Review question / Objective: This systematic review and metanalysis aim to evaluate the effect of upper limb strength training on climbing performance, and strength/endurance tests of healthy climbers and non-climbers.

Condition being studied: Upper limb strength and power have been related to climbing performance and climbers had developed special apparatus like fingerboard (FB) and campus board (CB) to mimic climbing motor demands, however, training methods applied for climbers are often adapted from other sports such as track-and-field and gymnastics. Information about the effectiveness of strength training on climbing performance is still to be determined.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 27 April 2022 and was last updated on 27 April 2022 (registration number INPLASY202240159).

INTRODUCTION

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track-and-field and gymnastics. Information about the effectiveness of strength training on climbing performance is still to be determined.

METHODS

Participant or population: Healthy males and females in any age group; climbers or non-climbers with no restriction of training status.

Intervention: Of upper limb strength training.

Comparator: control group and/or intervention.

Study designs to be included: Randomized trial and randomized control trial.

Eligibility criteria: Original studies (English only) that have been published in peer-reviewed journals. Exclusion criteria were Animal studies, case report, literature reviews, proposals for protocols and conference abstracts. Were also excluded studies related to effects of nutritional supplements or those with unsupervised interventions.

Information sources: Five databases were used to search and retrieve the articles in early October 2020 (PubMed/MEDLINE), Scopus, Cochrane Central, Web of Science/Core Collection, and Google academics. Reference lists of the included records will be also searched.

Main outcome(s): Climb performance and muscular strength outcomes either isometric or dynamic tests.

Quality assessment / Risk of bias analysis: The Physiotherapy Evidence Database (PEDro) scale will be used to provide information to evaluate the risk of bias in the selected studies.

Strategy of data synthesis: Meta-analyses of mean data for continuous variables are usually performed using the mean differences across studies and the pooled variance. For each Climb performance or

strength outcome, the contrast between the training or control groups is going to be calculated as the difference in effect sizes (ESs), where the ES will be determined as the posttest-pretest mean change in each group.

Subgroup analysis: To be determined.

Sensitivity analysis: sensitivity analysis will be conducted using the trim and fill method (funnel plot's).

Language: English.

Country(ies) involved: Brazil.

Other relevant information: This systematic review follows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page et al., 2021).

Keywords: Sport Climbing; Training Program; Sports Performance.

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