

INPLASY PROTOCOL

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None declared.

Effects of Plyometric Training on Skill Performance among Athletes: A Systematic Review of Randomized Controlled Trials

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Review question / Objective: This systematic review was conducted to assess the effects of plyometric training programmes on athletes' skill performance.

Eligibility criteria: Only full-text, peer-reviewed, original studies written in English were considered, excluding cross-sectional, review papers, or training-related studies that did not focus on the effects of PT exercises). Retrospective studies, prospective studies, studies for which only the abstract was available, case reports, special communications, letters to the editor, invited commentaries, errata, overtraining studies, patent were excluded.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 13 February 2023 and was last updated on 13 February 2023 (registration number INPLASY202320052).

INTRODUCTION

Review question / Objective: This systematic review was conducted to assess the effects of plyometric training programmes on athletes' skill performance.

Rationale: Plyometric training is a training method often used to improve athlete's physical performance, including strength, power, agility, speed, and balance.

However, plyometric training may also improve sports-specific skill performance. However, a systematic literature search regarding the effects of plyometric training on athletes' skills is lacking.

Condition being studied: Plyometric-based programmes restricted to a minimum of 4 weeks (duration) in athletes from any sport, age or sex.

METHODS

Search strategy: Electronic databases (PubMed, Scopus, SPORTDiscus, and Web of Science) were searched for relevant publications. A systematic investigation of the topic was carried out utilizing the Boolean operations AND and OR. For keyword selection and search strategy development, the authors sought advice from experienced librarians. The keywords are as follows: (“plyometric training” OR “plyometric exercise*” OR “stretch-shortening cycle” OR “stretch-shortening exercise*”) AND (“skill*” OR “skill performance” OR “Sport Skill Performance” OR “Sport Technology”). Furthermore, to find additional literature that might not have shown up in the search results using the four databases, a search was also carried out on Google Scholar and based on the reference lists of selected papers.

Participant or population: Athletes, with no restrictions on their sports background, sex, or age.

Intervention: Plyometric-based programmes restricted to a minimum of 4 weeks(duration) and no restricted to frequency(number of sessions per week).

Comparator: Active control group.

Study designs to be included: Randomized Controlled Trials.

Eligibility criteria: Only full-text, peer-reviewed, original studies written in English were considered, excluding cross-sectional, review papers, or training-related studies that did not focus on the effects of PT exercises). Retrospective studies, prospective studies, studies for which only the abstract was available, case reports, special communications, letters to the editor, invited commentaries, errata, overtraining studies, patent were excluded.

Information sources: Electronic databases (PubMed, Scopus, SPORTDiscus, and Web of Science) were searched for relevant publications.

Main outcome(s): Reported one or more sport skill performance (e.g., tennis serve velocity).

Quality assessment / Risk of bias analysis: The Physiotherapy Evidence Database (PEDro) scale was used to assess the methodological quality of the randomized controlled trials included in this systematic review. The scale scores the internal study validity in a range of 0 (low methodological quality) to 10 (high methodological quality). Eleven items are measured in the scale. Criterion 1 is not included in the final score. Points for items 2 to 11 were only attributed when a criterion was clearly satisfied. Two of the authors independently scored the selected articles. Disagreements in the rating between both authors were resolved through discussion with a third author.

Strategy of data synthesis: A summary of findings reported of the review studies (author, year, country, participants, duration, outcomes, protocols and conclusions).

Subgroup analysis: Not application.

Sensitivity analysis: Not application.

Language restriction: Only articles published in English were considered.

Country(ies) involved: Malaysia; China.

Keywords: plyometric training; skill performance; sport skill; athlete; systematic review.

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