

INPLASY PROTOCOL

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Support: None.

**Review Stage at time of this
submission:** Data extraction.

Conflicts of interest:

None declared.

Does plyometric exercise improve jumping performance in volleyball athletes?

Oliveira, MCT¹; Souza, ALX²; Mendonça, LD³; Santos, JFS⁴.

Review question / Objective: What are the effects of
plyometric interventions on jumping performance in volleyball
players?

Condition being studied: Systematic review and meta-analysis
on plyometric intervention in volleyball players from any sex
or age.

Eligibility criteria: Inclusion criteria: (i) Apparently healthy
volleyball players, with no restrictions on their playing level,
sex, or age; (ii) Chronic plyometric training program; (iii)
Passive or active control groups; (iv) Pre-post intervention
values of jumps (vertical jump, horizontal jump,
countermovement jump, drop jump and squat jump); (v)
controlled and/or parallel trial; and (vi) peer review, original,
full text studies. Exclusion criteria: (i) Volleyball players with
health problems (e.g., injuries, recent surgery) or another
sports than volleyball; (ii) Acute intervention or no plyometric-
based program; (iii) randomised control trials, cohort studies,
case series/reports, letter to editor, trial registration, proposal
for protocols, editorial, book chapters and conference
abstracts.

INPLASY registration number: This protocol was registered with
the International Platform of Registered Systematic Review and
Meta-Analysis Protocols (INPLASY) on 10 April 2021 and was last
updated on 10 April 2021 (registration number
INPLASY202140056).

INTRODUCTION

Review question / Objective: What are the
effects of plyometric interventions on
jumping performance in volleyball players?

Rationale: Plyometric exercise can be used
to improve volleyball player's jump

performance. However, an overview
regarding the effect of plyometric exercise
on volleyball player's is lacking.

Condition being studied: Systematic review
and meta-analysis on plyometric
intervention in volleyball players from any
sex or age.

METHODS

Search strategy: Electronic databases (PubMed, Web of Science and Scopus) were searched for relevant publications. Keywords and synonyms were entered in various combinations in all fields: (volleyball OR volleyball athletes OR volleyball players)" AND (strength training OR resistance training OR power training OR strength exercise OR ballistic exercise OR plyometrics exercise OR weightlifting exercise OR complex exercise).

Participant or population: Apparently healthy volleyball athletes, with no restrictions on their playing level, sex, or age.

Intervention: Chronic plyometric training program.

Comparator: Passive or active control groups.

Study designs to be included: Systematic review and meta-analysis.

Eligibility criteria: Inclusion criteria: (i) Apparently healthy volleyball players, with no restrictions on their playing level, sex, or age; (ii) Chronic plyometric training program; (iii) Passive or active control groups; (iv) Pre-post intervention values of jumps (vertical jump, horizontal jump, countermovement jump, drop jump and squat jump); (v) controlled and/or parallel trial; and (vi) peer review, original, full text studies. Exclusion criteria: (i) Volleyball players with health problems (e.g., injuries, recent surgery) or another sports than volleyball; (ii) Acute intervention or no plyometric-based program; (iii) randomised control trials, cohort studies, case series/ reports, letter to editor, trial registration, proposal for protocols, editorial, book chapters and conference abstracts.

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

Main outcome(s): The vertical jump, horizontal jump, countermovement jump,

drop jump and squat jump were chosen as the main outcome.

Additional outcome(s): None.

Quality assessment / Risk of bias analysis: The instrument used to assess the quality of reviews and meta-analysis was AMSTAR 2, which is an updated form of AMSTAR, where the group of experts considered that the reviews should address all aspects of conducting a systematic review and the challenges of including non-randomized studies. Assessment method: Yes = 1 point, Yes Partial = 0.5 and No = 0, totalizing 16 points.

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

Subgroup analysis: None.

Sensitivity analysis: None.

Language: English.

Country(ies) involved: Brazil.

Keywords: volleyball; sport science; sport performance.

Contributions of each author:

Author 1 - Maria Cecília Oliveira - Run the data search, performed the methodological assessment, conducting data extraction, analyse and interpreted the data, wrote and revised the original manuscript.

Author 2 - Áquila Larissa Souza - Run the data search, performed the methodological assessment, conducting data extraction and wrote the manuscript.

Author 3 - Luciana Mendonça - Interpreted the data, wrote and revised the original manuscript.

Author 4 - Supervisor of the project, performed the methodological assessment, analyse and interpreted the data, wrote and revised the original manuscript.