

INPLASY PROTOCOL

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Criteria for determining the intensity of plyometric training. A systematic review

Montoro, R¹; Sarmiento, H²; Buzzichelli, C³; Badillo, JG⁴; Rama, L⁵.

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Corresponding author:
Raynier Montoro Bombú

rayniermb@gmail.com

Author Affiliation:
Universidade de Coimbra

Support: Not applicable.

Review Stage at time of this submission: Formal screening of search results against eligibility criteria.

Conflicts of interest:
None declared.

Review question / Objective: The purpose of this systematic review is to identify and systematize the available knowledge about the publications related to the intensity in plyometric work, the intensity scales applied in different sports, ways of determining the intensity and procedures of the studies for the determination of the intensity with trained and untrained athletes regardless of gender. With this systematic review, the researchers seek to find common ground and define criteria.
Condition being studied: Determination of the intensity of the exercise in plyometric training, the intensity scales applied in different sports, ways of determining the intensity and procedures of the studies for the determination of the intensity.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 17 February 2021 and was last updated on 17 February 2021 (registration number INPLASY202120051).

INTRODUCTION

Review question / Objective: The purpose of this systematic review is to identify and systematize the available knowledge about the publications related to the intensity in

plyometric work, the intensity scales applied in different sports, ways of determining the intensity and procedures of the studies for the determination of the intensity with trained and untrained athletes regardless of gender. With this

systematic review, the researchers seek to find common ground and define criteria.

Rationale: Different attempts to define the intensity scales of plyometrics have been published in peer review periodic (Andrade et al., 2020; Jarvis et al., 2016; Van Lieshout et al., 2014). For Jarvis et al. (2016) the quantification of the intensity of plyometric exercise is ill defined. This has led to different authors (Andrade et al., 2020; Jarvis et al., 2016; Van Lieshout et al., 2014) to apply some intensity scales with different criteria for the maximum and minimum determination of intensity with unequal procedures. Therefore, the prevalence of these intensity scales and their practical applicability can help shape the future of different sports that use lower limbs power training.

Condition being studied: Determination of the intensity of the exercise in plyometric training, the intensity scales applied in different sports, ways of determining the intensity and procedures of the studies for the determination of the intensity.

METHODS

Search strategy: The review will be carried out in the following electronic databases: Web of Science, SPORTDiscus, Scopus and PubMed, for the investigation of original full texts published in English, Spanish and Portuguese. The search strategy is shown below: (Intensity OR Exercise Intensity) AND (Plyometric* OR (CMJ) OR (DJ) OR countermovement jumps OR squat jump OR drop jumps OR depth jumps OR vertical jumps OR horizontal jumps OR vertical jumps OR consecutive jumps).

Participant or population: Trained and untrained adults, youth and children. Gender will not be taken into account.

Intervention: We will investigate studies that apply, develop, propose or modify exercise intensity scales in plyometric training.

Comparator: Not applicable.

Study designs to be included: We do not limit studies.

Eligibility criteria: Articles were included: i) published in English, Spanish and Portuguese, ii) defined criteria or intensity scales in plyometric exercise, iii) Published in peer-reviewed journals, iv) present concrete results with intensity in plyometric work with trained and untrained adults, youth and children. Both male and female.

Information sources: The review will be carried out in the following electronic databases: Web of Science, SPORTDiscus, Scopus and PubMed, for the investigation of original full texts published in English and Spanish.

Main outcome(s): Advanced understanding of the different ways of determining the intensity of plyometric exercise for different sports and the possibility of unifying criteria in determining intensity.

Quality assessment / Risk of bias analysis: Three researchers will independently perform the risk of bias assessment of the articles using the PEDro scale. In case of disagreement, they will be discussed with all the authors and if necessary, another expert on the subject will be included.

Strategy of data synthesis: The data of the results will be synthesized based on a qualitative approach around: the authors, name of the study, type of research, characteristics of the population, country where it is carried out, intensity criterion used, procedure, main results and important observations. Risk ratios or standardised mean differences will be calculated to provide a summary of intervention effects for each study.

Subgroup analysis: If necessary, we differentiate the results by sex and age.

Sensitivity analysis: No sensitivity analysis will be performed for this study.

Language: English.

Country(ies) involved: Portugal, Italy, Spain and Cuba.

Keywords: Ground reaction forces, reactive strength index, Drop jumps, horizontal jumps, vertical jumps.

Contributions of each author:

Author 1 - Raynier Montoro Bombú - Selected titles, abstracts and full text regardless of the corresponding author. It contributed to the inclusion criteria, data extraction and risk of bias.

Email: rayniermb@gmail.com

Author 2 - Hugo Sarmiento - Methodology, development of selection criteria and strategy to assess the risk of bias.

Email: hg.sarmiento@gmail.com

Author 3 - Carlos Buzzichelli - Selected titles, abstracts and full text regardless of the corresponding author. It contributed to the inclusion criteria, data extraction and risk of bias.

Email: cb@isci.education

Author 4 - Juan José González Badillo - Oversaw the project. Read, provide comments, and approve the final manuscript.

Email: jjgbadi@gmail.com

Author 5 - Luis Rama - Oversaw the project. Read, provide comments, and approve the final manuscript.

Email: luisrama@fcdef.uc.pt