

INPLASY PROTOCOL

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Support: None.

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

Conflicts of interest: Filipe
Manuel Clemente and Hugo
Sarmiento declare that they have
no conflicts of interest relevant
to the content of this review.

INTRODUCTION

Review question / Objective: This systematic review was conducted to assess the effects of combined SSG and running-based methods on soccer player's acute responses and adaptations after training interventions.

Combining small-sided soccer games and running-based methods: A systematic review

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Review question / Objective: This systematic review was conducted to assess the effects of combined SSG and running-based methods on soccer player's acute responses and adaptations after training interventions.

Condition being studied: Combination of small-sided games and running-based methods.

Information sources: Electronic databases (Web of Science, Scopus, SPORTDiscus and PubMed) were searched for relevant publications prior to the 4th October of 2020.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 04 October 2020 and was last updated on 04 October 2020 (registration number INPLASY2020100010).

Rationale: Considering the above-mentioned threats (i.e., high intra and inter-individual variability and low high-speed running stimulus) (5), some recent experimental approaches have been testing the effects of combined forms of SSGs and running-based exercises (e.g.,

HIIT, sprinting) (12,22). This approach aims to add the mechanical stimulus of running-based HIIT to the apparently beneficial physiological effect of SSGs in the aerobic performance. Considering the growing number of original articles exploring the combination of SSGs and running-based exercises, it seems important to conduct a systematic review allowing us to summarize the main evidence and identify the future directions of this line of research for the future. Additionally, it is important to show how the combination can be employed in practical scenarios. Based on those reasons, the purpose of this systematic review is to assess the effects of combined SSG and running-based methods on soccer player's acute responses and adaptations after training interventions.

Condition being studied: Combination of small-sided games and running-based methods.

METHODS

Search strategy: Keywords and synonyms were entered in various combinations (i.e., "Soccer" OR "Football") AND ("small-sided games" OR "conditioned games" OR "SSG" OR "drill-based games" OR "small-sided conditioned games" OR "reduced games" OR "play formats") AND ("high-intensity interval training" OR "interval training" OR "high-intensity training" OR "endurance" OR "run" OR "sprint*").

Participant or population: Soccer players of any age and sex.

Intervention: Combined small-sided games and running-based methods.

Comparator: Control; single methods.

Study designs to be included: Experimental and observational study designs.

Eligibility criteria: The a priori inclusion criteria for this systematic review were as follows: (i) only combined training including SSG and other training method in the same protocol with no limitation to sex, age or

competitive level; (ii) acute effects or adaptations resulted from combined SSG and purely running-based methods; (iii) only studies conducted in soccer (association football); and (iv) only studies written in English that provided full-text.

Information sources: Electronic databases (Web of Science, Scopus, SPORTDiscus and PubMed) were searched for relevant publications prior to the 4th October of 2020.

Main outcome(s): Acute physiological, physical, technical and tactical responses or physical, technical and tactical adaptations.

Quality assessment / Risk of bias analysis: For the case of intervention studies, The Physiotherapy Evidence Database (PEDro) scale (16) was used to assess the methodological quality of the intervention studies included in this systematic review and meta-analysis. The scale scores the internal study validity in a range of 0 (high risk of bias) to 10 (low risk of bias). Eleven items are measured in the scale. The criterion 1 is not included in the final score. Points for items 2 to 11 were only attributed when a criterion was clearly satisfied. For the case of cross-sectional studies, the appraisal tool to assess the quality of cross-sectional studies (AXIS) was used to classify the methodological quality of the articles (8). The scale includes 20 items, in which 1 is related to the introduction, 10 are related to methods, 5 are related to results, 2 are related to discussion, and 2 consider other.

Strategy of data synthesis: The following information was extracted from the included original articles: (i) type of study design, number of participants (n), age-group (youth, adults or both), sex (men, women or both), competitive level (if available), and type of original articles included (experimental, observational analytic or both); (ii) identification of the effects (acute or adaptations), dimension of analysis (internal load or biological responses in exercise; external load or physical demands in exercise; technical

actions; tactical behavior; recovery/fatigue/readiness; psychological; fitness variations), outcomes explored, and main findings.

Subgroup analysis: None.

Sensibility analysis: None.

Language: English.

Country(ies) involved: Portugal.

Keywords: football; performance; drill-based games; conditioned games; high-intensity interval training.

Contributions of each author:

Author 1 - Filipe Manuel Clemente - Lead the project, run the data search and methodological assessment, and wrote and revised the original manuscript.

Author 2 - Hugo Sarmento - Run the data search and methodological assessment and wrote and revised the original manuscript.