

INPLASY PROTOCOL

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Support: None.

**Review Stage at time of this
submission:** Formal screening
of search results.

Conflicts of interest:
None declared.

Reference Values for External and Internal Load Monitoring in Female Soccer Players: A Systematic Review

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Moreno-Villanueva, A⁵; Clemente, FM⁶.

Review question / Objective: The current systematic review
purposed to (1) identify and summarize studies that have
examined external and internal training and or match load
monitoring and to provide references values for the main
measures in women soccer players.

Condition being studied: Through this systematic review,
external and internal workload variables will be analysed and
described for the different days of the week, including the
match day. With such information, coaches, their staff and
practitioners will be able to collect reference values of the
main external and internal measures for women soccer
players.

INPLASY registration number: This protocol was registered with
the International Platform of Registered Systematic Review and
Meta-Analysis Protocols (INPLASY) on 04 July 2021 and was last
updated on 29 August 2021 (registration number
INPLASY202170010).

INTRODUCTION

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METHODS

Search strategy: Keywords and synonyms were entered in various combinations in the title, abstract or keywords: (“soccer” OR “football”) AND (“female” OR “women”) AND (“internal load” OR “external load” OR “workload” OR “training load” OR “training demands” OR “match” OR “matches” OR “game*” OR “load monitoring”). Search results were exported to EndNote 20.0.1 for Mac (Clarivate Analytics). No filters or limits were applied.

Participant or population: Healthy female soccer players from any age or competitive level.

Intervention: Exposure to entire training sessions for number of weeks and sessions included (minimum one week) or entire match (more than one official or non-official match).

Comparator: Not required. Eventually, comparisons between playing positions and/or competitive levels within the same age-group and/or age-groups.

Study designs to be included: No restrictions imposed on study design.

Eligibility criteria: Population: Healthy female soccer players from any age or competitive level. Intervention: Exposure to entire training sessions for number of weeks and sessions included (minimum one week) or entire match (more than one match). Comparator: Not required. Eventually, comparisons between playing positions and/or competitive levels within the same age-group and/or age-groups. Outcomes: Presents at least of one measure among the included in internal load (e.g., heart rate, rate of perceived exertion) and external load (e.g., distances covered at different speed thresholds, acceleration-based measures). No restrictions imposed on study design. Only original and full-text studies written in English.

Information sources: FECYT (MEDLINE, Scielo, and Web of Science), PubMed, and Scopus.

Main outcome(s): Presents at least of one measure among the included in internal load (e.g., heart rate, rated perceived exertion) and external load (e.g., distances covered at different speed thresholds, acceleration-based measures) in absolute values. Exclusion criteria - Outcomes: Absence of data characterizing the load during the training sessions (e.g., wellness variables, readiness parameters). and or only reports the data in relative values without allowing the calculation of absolute values. Data from workload calculations will also be excluded (e.g., accumulated weekly load, training monotony, strain, ACWR, EWMA). Data from percentage or duration for external and internal load measures will also be excluded.

Quality assessment / Risk of bias analysis: The methodological quality was assessed using the methodological index for non-randomized studies (MINORS).

Strategy of data synthesis: The following information was extracted from the included original articles: characteristics of the participants (e.g., age; number; sex; competitive level); condition (match and or training); study duration; study type; internal measures; external measures. In addition, mean and standard deviation or range values (min-max) for the external and internal measures were extracted by the overall team or by player positions/status.

Subgroup analysis: None.

Sensitivity analysis: None.

Language: English.

Country(ies) involved: Portugal, Spain.

Keywords: football; training; match; women; workload.

Contributions of each author:

Author 1 - Rafael Oliveira - The author lead the project, designing the review,

coordinate the project and wrote and revised the original manuscript.

Author 2 - João Brito - The author wrote and revised the original manuscript.

Author 3 - Markel Rico-González - The author run the data search, methodological assessment and wrote and revised the original manuscript.

Author 4 - Nalha Matilde - The author wrote and revised the original manuscript.

Author 5 - Adrián Moreno-Villanueva - The author run the data search, methodological assessment and wrote and revised the original manuscript.

Author 6 - Filipe Clemente - The author wrote and revised the original manuscript.