

# INPLASY

## Regulating body mass in wrestling - advice from the most cited combat sport literature

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### ADMINISTRATIVE INFORMATION

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**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 03 July 2024 and was last updated on 03 July 2024.

## INTRODUCTION

**Review question / Objective** This paper aims to review highly cited studies dealing with weight regulation in combat sports. These studies should help draw conclusions and make recommendations for wrestlers who manipulate body weight. This paper summarizes a topic written about for nearly 100 years and investigated in thousands of studies.

**Background** Wrestlers strive to compete in the lowest weight category possible to gain an advantage in strength. It did not take long for this phenomenon to be recognized as a problem, and it can be found in the scientific literature as early as the 1930s. Today, almost 100 years later, this issue remains relevant in the literature. The number and arrangement of weight categories have changed, but harmful weight management practices persist. In body mass regulation in wrestling, special emphasis is placed on rapid weight loss (RWL) and

rapid weight gain (RWG) due to their aggressive nature and the manipulation of a significant amount of body mass in a very short time. This problem affects almost 80% of participants in martial arts, it is the same for both sexes and also occurs in younger age groups. This is why a plethora of scientific papers have been written on this topic (at the time of writing this paper, the Web of Science scientific database (Core Collection) produced 2938 results in a search using the terms "weight reduction" and "sport"). Today, the challenge is not accessing research on body weight reduction in wrestling but rather navigating through the data and papers to select relevant ones and draw conclusions that can be helpful in practice (for wrestlers, coaches, and other professionals).

**Rationale** Wrestlers strive to compete in the lowest weight category possible to gain an advantage in strength. It did not take long for this phenomenon to be recognized as a problem, and it

can be found in the scientific literature as early as the 1930s. Today, almost 100 years later, this issue remains relevant in the literature. The number and arrangement of weight categories have changed, but harmful weight management practices persist. In body mass regulation in wrestling, special emphasis is placed on rapid weight loss (RWL) and rapid weight gain (RWG) due to their aggressive nature and the manipulation of a significant amount of body mass in a very short time. This problem affects almost 80% of participants in martial arts, it is the same for both sexes and also occurs in younger age groups. This is why a plethora of scientific papers have been written on this topic (at the time of writing this paper, the Web of Science scientific database (Core Collection) produced 2938 results in a search using the terms "weight reduction" and "sport"). Today, the challenge is not accessing research on body weight reduction in wrestling but rather navigating through the data and papers to select relevant ones and draw conclusions that can be helpful in practice (for wrestlers, coaches, and other professionals).

## METHODS

**Strategy of data synthesis** We will search the scientific databases Web of Science (WOS) and Scopus, the most relevant databases for sports science. The primary combination of keywords :

1. weight control and combat sport
2. weight management and combat sport
3. weight cycling and combat sport
4. weight loss and combat sport
5. rapid weight loss and combat sport
6. rapid weight gain and combat sport

We will take 5 most cited articles on each keyword combination: 6 keywords × 5 most cited articles = 30 articles × 2 databases = 60 articles.

### Eligibility criteria

Exclusion criteria:

1. not on combat sport sample
2. not about weight regulation
3. duplicate papers

Inclusion criteria:

1. full text
2. English language.

**Source of evidence screening and selection** All authors will search both databases. After comparing their findings, they will determine 60 papers that will be further analyzed. In the first phase, duplicate papers and off-topic papers will be rejected. Other inclusion and inclusion criteria will then be applied.

**Data management** Collected papers will be classified into 5 categories

1. weight loss and health
2. weight loss and performance
3. weight loss habits
4. weight loss and legal regulations
5. weight loss psychology

Each author will analyze 1 - 2 categories of papers. A review of each category will be done by two other authors who were not involved in the analysis.

**Presentation of the results** The PRISMA flow chart will be shown, followed by a tabular representation of all papers. Papers will be arranged by citations (from most to least citations). The display will include authors, year, number of citations, sample in the study, and category to which it belongs (health, performance, weight loss habits, legal regulation, psychology).

**Language restriction** English.

**Country(ies) involved** Croatia (Faculty of Kinesiology University of Split).

**Keywords** combat sports; weight reduction; health.

**Dissemination plans** The study should provide directions for future research on this topic.

### Contributions of each author

Author 1 - Hrvoje Karninčić - Acquisition, analysis, interpretation of data, and final approval of the version to be published.

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