

**“Monitoring and diagnosis of fatigue, maladaptation,
overload and overtraining in sports.
Strategies for optimizing sports performance”**

Possible release of the special issue of JHK is February/March 2026

Special Issue Editors:

Prof. Michal Toborek

Department of Biochemistry and Molecular Biology, Leonard M. Miller Professor
Professor and Vice-Chair for Research for the Department of Biochemistry at the University of Miami, Miller
School of Medicine, Miami, USA

Research Interests: Integrity of the blood-brain barrier (BBB) and how different pathological conditions can lead to the disruption and/or dysfunction of the BBB

Jakub Chycki, PhD

Department of Sports Training, Jerzy Kukuczka Academy of Physical Education in Katowice, Katowice, Poland
Sports and Health Innovation Centre, Jerzy Kukuczka Academy of Physical Education in Katowice, Katowice,
Poland

Research Interests: Exercise physiology, monitoring fatigue in sports training, mild traumatic brain injury (mTBI) in combat sports athletes

Special Issue Information

Keywords: Monitoring, Performance, Maladaptation, Biomarkers, Functional/Non-functional overreaching, Mild Traumatic Brain Injury (mTBI), Fatigue, Training load optimization

Dear Colleagues,

The phenomenon of reduced athletic performance after prolonged, intense training was first recognized more than 90 years ago. Despite hundreds of scientific publications on overtraining and overload in the training process, **there are still no clear-cut protocols for diagnosis, reliable biomarkers, effective tools for monitoring and estimating the risk of overload, or unambiguous treatments.**

In sports, the control of exposure to stress factors such as physical activity, psychological and environmental stress, determines the training effect defined as the occurrence of desirable, beneficial physiological adaptations. The boundary between beneficial and undesirable effects of stress factors, such as physical activity, on the human body is very subtle, variable and non-objective. The accumulation of suprathreshold stressors, not necessarily of high intensity, but prolonged, leads to depletion of adaptive potential, impairment of the supercompensation process, disruption of allostasis, physiological maladaptation, and, consequently, to ineffectiveness of the training program, increased risk of injury or loss of health.

The individualization and personalization of training necessitates the need to monitor the body's response to training loads with different characteristics in order to predict the rate of specific adaptation, prevent injury and minimize the risk of impairment.

Based on current knowledge, stress in exercise physiology is a state of compromised homeostasis that is counteracted by adaptive processes involving physiological, biochemical, molecular and cognitive-behavioral responses to regain equilibrium.

This Special Issue of the JHK aims to collect a series of original and review papers considering the symptoms of fatigue, biomarkers of fatigue and maladaptation in sports training, functional/nonfunctional overreaching, overtraining syndrome and training optimization.

Key paper topics include, but are not limited to, the following:

- Training monitoring,
- Biomarkers of fatigue and maladaptation in sports training,
- Symptoms of fatigue, overload and overtraining,
- Mild traumatic brain injury in sport (mTBI),
- Enhancement of recovery strategies to optimize performance,
- Nonfunctional overreaching/overtraining syndrome.

Submission Guidelines

- Manuscripts should adhere to the journal's formatting and submission guidelines.
- We will accept research articles, review articles, case studies, clinical trials, perspectives and opinions, as well as letters to editors.
- All submissions will undergo a rigorous peer review process to ensure the highest quality of scholarship.
- Manuscripts should be submitted online through the journals submission system, specifying "Monitoring in Sports" special issue.
- The deadline for manuscript submission is set at September 30, 2025.
- Expected publication of the special issue is set for February/March 2026.

We look forward to receiving your submissions and creating a dynamic and impactful special issue.

SUBMIT MANUSCRIPT <https://www.editorialsystem.com/jhk>