Website address:
https://www.gesundheitsindustrie-bw.de/en/article/press-release/cooperative-project-researches-interaction-top-female-athletes-menstrual-cycle-performance-and-health

Cooperative project researches interaction of top female athletes' menstrual cycle, performance and health

The Federal Institute of Sports Science (BISp) is funding a project into sex-specific differences in competitive sports. The Athletin-D project combines the universities of Bochum, Freiburg, Wuppertal and the Technical University of Munich on research into how the performance and health of female athletes could be improved in Olympic and paralympic sports. At the University of Freiburg, the sports psychologist Professor Jana Strahler is studying the interaction of hormonal processes, stress, lifestyle factors and mental health.

The Federal Institute of Sports Science (BISp) is funding a new cooperative project into sex-specific differences in competitive sports. The Athletin-D project unites the universities of Bochum, Freiburg, Wuppertal and the Technical University of Munich in research into how the training and health management of female athletes could be improved in Olympic and paralympic sports, in particular in the context of the menstrual cycle. The consortium is receiving funding of almost 1.6 million euros for four years from BISp's sponsorship of research relating to female athletes and the conflicting demands of performance optimisation and health maintenance.

The interdisciplinary core team of the consortium involves Professor Karsten Köhler, nutritionist from Technical University of Munich, Professor Kirsten Legerlotz, training scientist from the University of Wuppertal, Professor Petra Platen, sports and nutritional expert at the University of Bochum, and Professor Jana Strahler, sports psychologist at the Department of Sport and Sport Science of the University of Freiburg.

Interaction of menstrual cycle with performance and health

At the University of Freiburg, Strahler is leading a part of the project based at the Health Education & Research Lab (HER Lab) that looks at the interaction of the hormonal processes, stress, lifestyle factors and mental health of female athletes. The goal is to systematically gather data on daily psychophysiological processes during training and competition, and harness it for performance and health management.

"We want to gain a better understanding of how physical and mental factors jointly influence the performance and regeneration of female athletes," says Strahler. "The project aims to enable sex-specific differences in competitive sports to be systematically recognised and allow practical improvements to be developed for the training, monitoring and interdisciplinary support of female athletes."

"The project aims to enable sex-specific differences in competitive sports to be systematically recognised and allow practical improvements to be developed for the training, monitoring and interdisciplinary support of female athletes." - Prof. Dr Jana Strahler (Sports psychologist at the Department of Sport and Sport Science of the University of Freiburg)

The researchers want to increase knowledge of how the menstrual cycle influences performance and trainability, as well as how top-level training and associated physical, mental and nutritional factors affect the health of the cycle. Furthermore, they want to make good practical use of this knowledge.

Interlinking of research and competitive sports activities

The project is taking a transdisciplinary approach. Key to this is its interlinking with competitive sports: the researchers will develop solutions working closely with female athletes, trainers and teams of experts. To do this, the consortium is working together with elite sports associations, Olympic training centres and international partners. The researchers aim to use this cooperation to identify gaps in knowledge and application, and study them scientifically.

"We want to use new methods in Freiburg, and for example measure biological stress markers in the body. This involves us using among other things the Ecological Momentary Assessment, a scientific method that records behaviour, emotions and physical processes in real time in female athletes' daily environment," says Strahler. "In this way we can map load and

adaptation processes in daily training in detail and understand them better."

Cycle-based monitoring and training adaptation

From their findings, the researchers will develop a freely available digital monitoring system that systematically and individually records data on the menstrual cycle and incorporates it in training guidance and health management. This will provide an interface between female athletes, trainers and interdisciplinary support, and complement existing monitoring activities in competitive sports.

About the person:
Professor Dr Jana Strahler is Professor of Sports Psychology at the University of Freiburg's Department of Sport and Sport Science, and heads the Health Education & Research Lab (HER Lab). Research at HER Lab focuses on health-related behaviour, mental health, sex-specific differences in prevention and performance, movement, body awareness and embodiment, menstrual cycle and sporting performance. It brings together scientific approaches from psychology, sports science and health research, with a special focus on sex and gender. Strahler also researches psychophysiological stress processes and their significance for health and performance in sport. She is the president of the Arbeitsgemeinschaft für Sportpsychologie in Deutschland e.V.

Press release

07-May-2026
Source: University of Freiburg

Further information

- University of Freiburg