



SPORT & TECHNOLOGY

SPGM



**DIGITAL
WORKOUT**

**FATIGUE
REDUCTION**

**COOLING
TECHNOLOGIES**

NEWS, NEWS, NEWS

News of the professorship

Prof. Senner has been invited to deliver a keynote address at the recent BioMed 2023 Congress in the vibrant city of Dubai, United Arab Emirates.

Keynote Title: "Engineering the interaction between footwear design, soil & turf properties, and human's biomechanics."

Theme: "Harnessing the Power of Cutting-Edge Technologies for Health Enhancement."

To be continued [here](#)



DIGITAL WORKOUT VERSUS TEAM TRAINING: THE IMPACT OF THE COVID-19 PANDEMIC ON ATHLETES



by Friedemann Schneider, Armin Runer, Francesco Burkert, Jesse Seilern Und Aspang, Simon Reider, Holm Schneider, Elena Pocecco

This study aimed to assess the impact of the COVID-19 pandemic on sports participation and safety measures adopted. It involved a global survey in June 2020, with 1336 adults participating. Most were European amateur athletes. During confinement, 15.7% continued unrestricted sports, 43.5% reduced activity time, and 46.4% decreased intensity. Participants were largely unaware of COVID-19 screening and return-to-sports guidelines. Factors affecting activity levels included age, training in clubs, and access to online training. Overall, pandemic-related isolation significantly influenced physical activity levels.

Read the publication [here](#)

THE ROLE OF ENGINEERING IN FATIGUE REDUCTION DURING HUMAN LOCOMOTION — A REVIEW



by Guillaume Millet, Stéphane Perrey, Caroline Divert, Matthieu Foissac

This review explores how recent innovations in sports engineering can reduce athlete fatigue, particularly during endurance sports. It covers various aspects, including mechanical stress, equipment weight, and technical innovations. Soft shoes may not reduce impact forces during running compared to hard shoes. Excessive cushioning can increase energy cost and fatigue during running and mountain biking. Efficient equipment and work distribution can decrease fatigue. Elite athletes benefit more in terms of performance than fatigue reduction from technical innovations. The review also discusses textile innovations like compression stockings and temperature regulation to reduce fatigue. Additionally, it mentions two recovery methods, compression and electromyostimulation, commonly used by elite athletes, although their scientific effectiveness is limited, except for recovery after eccentric exercise.

Read the publication [here](#)

ETHICAL DILEMMAS AND VALIDITY ISSUES RELATED TO THE USE OF NEW COOLING TECHNOLOGIES AND EARLY RECOGNITION OF EXERTIONAL HEAT ILLNESS IN SPORT



by Borja Muniz-Pardos, Konstantinos Angeloudis, Fergus M Guppy, Kumpei Tanisawa, Yuri Hosokawa, Garrett I Ash, Wolfgang Schobersberger, Andrew J Grundstein, Fumihiro Yamasawa, Sebastien Racinais, Douglas J Casa, Yannis P Pitsiladis

The Tokyo 2020 Olympic Games were expected to be very hot, increasing the risk of exertional heat stroke (EHS) in non-acclimated individuals. Research is rapidly advancing to develop effective cooling methods and wearable technology for temperature monitoring. However, ethical concerns include unknown health impacts of cooling wearables, unequal access for athletes, and decisions regarding athlete participation based on real-time temperature data. This review aims to summarize cooling strategies for safety and performance and highlight opportunities and ethical dilemmas posed by emerging technology in EHS management.

Read the publication [here](#)