

28th ECSS Anniversary Congress, Paris/France, 4-7 July 2023

Heat acclimation and the elite athlete: Benefits and integration into the training programme

Périard, J.

University of Canberra

Heat acclimation and the elite athlete: Benefits and integration into the training programme Abstract: Heat acclimation has been suggested to be the most important intervention one can adopt to reduce physiological strain and optimise performance in the heat. The adaptations stemming from regular exposure to heat stress enhance thermoregulatory capacity, improve fluid balance and increase cardiovascular stability. The functional benefits associated with heat adaptations lead to improvements in endurance performance and comfort in the heat, and reduce the risk of exertional heat illness and thermal injury. Although the benefits of heat acclimation are well established, a key question for elite athletes regarding the implementation of heat training is when to schedule it in the overall training programme. Prior to a major competition, most athletes will undertake a block of training in which volume and/or intensity are increased, followed by a period of taper. Supplementing the intensified training period with exercise-heat exposures may lead to suboptimal training adaptations due to fatigue accumulation and inadequate recovery, particularly when adopting more traditional and rigorous laboratory-based heat acclimation regimens (e.g. 10-14 consecutive days of exercise in the heat for 90 min). Moreover, while exercise-heat exposure during the taper may help maintain the benefits of heat acclimation, it may also interfere with the goal of reducing overall training load. As such, this presentation will outline the time course of human heat adaptation, detail the performance benefits conferred by acclimation when exercising in hot environmental conditions, and explain the different approaches that can be used to induce heat acclimation. These different approaches, including the controlled heart rate and post-exercise passive heat exposure approaches, will be contextualised to the different training periods leading up to a major competition. Examples of which approaches to use and when to implement these will be provided. The benefits of heat re-acclimation will also be outlined, along with timelines for its implementation for the re-induction of adaptations. The different heat acclimation approaches will also be discussed in relation to the availability of resources and arrival timeline of the athlete at the competition venue. Physiologist, coaches and athletes will benefit from this presentation by gaining a deeper understanding of the nuances associated with implementing heat acclimation into the training programme of elite athletes.

Topic: Molecular Biology and Biochemistry

Presentation: Invited

European Database of Sport Science (EDSS)

Supported by SporTools GmbH



8104