

LOW-FREQUENCY ELECTRICAL STIMULATION COMBINED WITH A COOLING VEST IMPROVES RECOVERY OF ELITE KAYAKERS FOLLOWING A SIMULATED 1000-M RACE IN A HOT ENVIRONMENT

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This study compared the effects of a low-frequency electrical stimulation (LFES; Veinoplus® Sport, Ad Rem Technology, Paris, France), a low-frequency electrical stimulation combined with a cooling vest (LFESCR) and an active recovery combined with a cooling vest (ACTCR) as recovery strategies on performance (racing time and pacing strategies), physiologic and perceptual responses between two sprint kayak simulated races, in a hot environment ($\square 32$ wet-bulb-globe temperature). Eight elite male kayakers performed two successive 1000-m kayak time trials (TT1 and TT2), separated by a short-term recovery period, including a 30-min of the respective recovery intervention protocol, in a randomized crossover design. Racing time, power output, and stroke rate were recorded for each time trial. Blood lactate concentration, pH, core, skin and body temperatures were measured before and after both TT1 and TT2 and at mid- and post-recovery intervention. Perceptual ratings of thermal sensation were also collected. LFESCR was associated with a very likely effect in performance restoration compared with ACTCR (99/0/1%) and LFES conditions (98/0/2%). LFESCR induced a significant decrease in body temperature and thermal sensation at post-recovery intervention, which is not observed in ACTCR condition.

Conclusion:

the combination of LFES and wearing a cooling vest (LFESCR) improves performance restoration between two 1000-m kayak time trials achieved by elite athletes, in the heat.