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

Comparison of heat preparation strategies in elite track and field athletes prior to the Doha 2019 World Athletics Championships and Tokyo Olympics 2020ne

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INTRODUCTION:

Increasing data regarding elite endurance athlete preparations for competition in hot conditions continues to emerge, reinforcing our understanding of heat acclimation (HeA), heat acclimatisation (HtA) and/or heat mitigation strategies in this population. However, exertional heat illnesses (EHI) have been reported in non-endurance athletes as well, suggesting this population would also benefit from said preparation strategies. This study explored how track and field athletes prepared for competition in the heat at the Doha World Athletics Championships 2019 (DOHA) and Tokyo Olympics 2020ne (TOKYO). **METHODS:**

48 (28 male) DOHA and 36 (15 male) TOKYO athletes completed a paper (DOHA) or online (TOKYO) survey on heat preparation strategies for their stadium events. Athletes were grouped by sex (MALE vs. FEMALE) and climate they lived/trained in [hot (HOT) vs. temperate/cold (TEMPERATE)], with relationships assessed. **RESULTS:**

40% (DOHA) and 39% (TOKYO) indicated 'no specific heat training' prior to competition, 58% (DOHA) and 33% (TOKYO) used HtA only, 0% (DOHA) and 17% (TOKYO) used HeA only and 2% (DOHA) and 11% (TOKYO) used both HtA and HeA. 80% of athletes from HOT (46% TEMPERATE) used HeA/HtA prior to DOHA. At TOKYO, MALE athletes predominately selected 'no specific heat training' (53%) or using HtA only (47%), whereas females selected no specific heat training (29%), HeA only (29%), HtA only (24%) and both HeA and HtA (19%). 14% [DOHA (0% TOKYO)] of athletes reported a previous EHI diagnosis while the most common symptoms of EHI reported by athletes during previous training/competition in the heat included cramping (27%), nausea (13%) and severe headache (13%) at DOHA and nausea (22%) and severe headache (19%) at TOKYO. Athletes reported having no pre-cooling (76%) or mid-cooling (73%) strategies for DOHA. At TOKYO pre-cooling strategies included ice slurry/cold water ingestion (53%), direct ice application (47%), cold towel (42%), ice vest (31%), and water/ice pouring/dousing (25%) and ice slurry/cold water ingestion (42%), no strategy (36%), direct ice application (33%) and cold towel (31%) for mid-cooling. CONCLUSION:

The use of HeA/HtA (~60%) by non-road race athletes did not differ between competitions albeit at lower reported adoption than road-race peers at DOHA (63%). Use of HeA/HtA was higher in HOT compared to TEMPERATE (DOHA) and use in FEMALE varied greater (i.e. HeA, HtA or combined HeA/HTA) than MALE prior to TOKYO. Preand mid-cooling strategies were more prevalent at TOKYO than DOHA, likely due to differences in stadium environment (air-conditioned DOHA and not at TOKYO). Future research would benefit from: i) a greater understanding of the prevalence/incidence of EHI/EHS among non-endurance athletes'; ii) how knowledge of evidence informed practice and the real/perceived barriers (e.g. access to facilities, impact on usual training) to implementing HeA/HtA impact its use in this population.

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