

## ABSTRACT

The practice of precooling, or reducing core temperature ( $T_c$ ), improves exercise performance by starting the body at a cooler temperature, thereby enabling an athlete to increase their heat storage and perform more work prior to reaching a limiting  $T_c$ . **Purpose:** To observe the effects of various precooling and warm-up combinations on 5km time trial performance as well as to develop an ideal method of standardization to reduce performance variability within the time trial. **Methods:** Seven highly-trained male endurance runners completed a familiarization trial, as well as four trials consisting of different combinations of a 10-minute warm-up, 30-minute precool by cold water immersion ( $24 \pm 1^\circ\text{C}$ ) or 30 minutes of sitting. Each pretreatment condition was then followed by a 5km time trial treadmill run. Core temperature ( $T_c$ ), heart rate (HR), distance run (DR) and rating of perceived exertion (RPE) were measured during all experimental trials. **Results** cold wncity cn( ti)-3(me.75 r)3(ur)3((p=3(m0.996T3460.A17.0uB1 0 0 h