occurring in long distance runners (Martin, 1997). Whether heat intolerance is permanent or acquired the consequences of EHI among endurance athletes emphasise the importance of a running specific test to evaluate individual's ability to withstand exercise heat stress.

Experimental procedures have been applied to cause a rise in core temperature under resting and exercise conditions to challenge the thermoregulatory responses (Inoue et al., 2005; Johnson et al., 2013; Kenney and Hodgson, 1987; Montain et al., 1994). These procedures are used as a method of assessing the ability of an individual to withstand heat stress and evaluate heat dissipating mechanisms. The Israeli Defence Force (IDF) developed a heat tolerance test (HTT) to evaluate whether military personnel's experience of EHI, was temporary or permanent, supporting a safe return to duty (Moran et al., 2004). The protocol involves 120 min walking on a treadmill at a pace of 5 km h

from a fingertip and analysed for lactate concentration (YSI 2300 Plus, Yellow Springs Instruments, Ohio, USA). Lactate threshold was determined using the point at which blood lactate increased 1 mM above resting value (Jones and Doust, 1998).

Following a ~15 min recovery participants performed 1 min incremental (1% gradient) stages to volitional exhaustion. Expired

markers of heat tolerance and heat acclimation, namely Tr_{peak}, $T_{sk,peak}$, HR_{peak} and SR were used for analysis (Moran et al., 2007; Sawka et al., 2011). The main finding from the current study is that the RHTT had good agreement, strong correlations and small differences between repeated trials and the TEM values for these classic markers suggested low within-participant variability. Interestingly, values of Tr_{peak}, $T_{sk,peak}$, HR_{peak} and SR appear to be spread along a continuum, suggesting greater face validity in contrast to the dichotomous classification previously suggested (

values the more pronounced the state of heat intolerance, thus implying a continuum of heat tolerance. Similarly work from, Taylor and Cotter (2006) propose that heat adaptation is a continuum, with the position of an individual along the continuum representing progressive increases in heat tolerance. The findings in the present study demonstrate clearly that an individual's heat tolerance, represented by the Tr_{peak}, $T_{(\ldots)}$, HR_{peak} PSI_{peak} and SR, is a continuous variable; demonstrating that individual's heat tolerance may be more accurately categorised on a continuum. Consequently, these findings support the use of the RHTT to track changes in individual's ability to withstand exercise heat stress from acute and chronic heat-alleviating interventions.

Cases of EHI can occur among endurance athletes, in extreme circumstances leading to death; however, the epidemiology is not well documented in the literature. Martin (1997) reported the highest incidence of EHI occurred in long distance runners during the 1992 New Orleans U.S. Olympic Trials and the 1996 Atlanta Olympics; with long distance runners accounting for 31% and 53% respectively, of the total cases of EHI. Furthermore, Nielsen (1996) provides data to suggest the incidence of heat illness is unavoidable for endurance runners when competing in a high ambient temperature combined with high relative humidity without a severe reduction in endurance performance; highlighting the importance of thorough preparation to prevent the incidence of a heat illness. The findings in the current study could be applied in a manner that would serve to minimise the number of athletes that suffer from hyperthermia, by supporting a more complete evaluation and subsequent preparation prior to training and competing in the heat (Johnson et al., 2013).

The typical error of measurement expressed as a coefficient of variation can be used to estimate sample size for future studies using the RHTT when a smallest worthwhile change is known; using the formula $=8\,s^2$

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