Recovery from transport and acclimatisation of competition horses in a hot humid environment.


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The aims of the present field-based study were to investigate changes in fit horses undergoing acclimatisation to a hot humid environment and to provide data on which to base recommendations for safe transport and acclimatisation.

Six horses (age 7-12 years) were flown from Europe to Atlanta and underwent a 16 day period of acclimatisation. Exercise conditions during acclimatisation (wet bulb globe temperature index 27.6 +/- 0.0 [mean +/- s.e.]) were more thermally stressful compared with the European climate from which the horses had come (22.0 +/- 1.8, P < 0.001). Following the flight, weight loss was 4.1 +/- 0.8% bodyweight and took around 7 days to recover.

Water intake during the day was significantly increased (P < 0.05) compared with night during acclimatisation. Daily mean exercise duration was 72 +/- 12 min and the majority of work was performed with a heart rate below 120 beats/min. Respiratory rate (fR) was increased (P < 0.05) throughout acclimatisation compared with in Europe, but resting morning (AM) and evening (PM) rectal temperature (TREC), heart rate (fC) and plasma volume were unchanged.

White blood cell (WBC) count was significantly increased at AM compared with in Europe on Days 4 and 10 of acclimatisation (P < 0.01), but was not different by Day 16.

In conclusion, horses exposed to hot humid environmental conditions without prior acclimatisation are able to accommodate these stresses and, with appropriate management, remain fit and clinically healthy, without significant risk of heat illness or heat-related disorders, provided they are allowed sufficient time to recover from transport, acclimatisation is undertaken gradually and they are monitored appropriately.