THE INFLUENCE OF FLUID INGESTION ON SOCCER PERFORMANCE IN FEMALE PLAYERS
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Background: McGregor and colleagues (1999), using male soccer players, showed that fluid intake during simulated match-play maintained soccer skill better than when exercising without fluid ingestion. The relationship between fluid balance and skill performance in female players is less well understood. Therefore, the aim of this study was to examine the influence of fluid ingestion during soccer-type activity on skill and sprint performance in female players.

Methods: Eight healthy female soccer players performed 90 min of the Loughborough Intermittent Shuttle Test (LIST; Nicholas et al. 2000) on two separate occasions. On one occasion (FL) subjects received 5 ml/kg of water prior to commencing exercise and 3 ml/kg after every 15 min of the LIST; in the control trial (NF) subjects were only given 5 ml/kg of fluid before exercise. Subjects performed the Loughborough Soccer Passing Test (LSPT; Ali et al. (in press)) before commencing exercise and after every 15-min block of the LIST. Body mass was measured before and after exercise and ratings of perceived exertion and 'thirst' were monitored at regular intervals during the LIST.

Results: Mean LSPT performance time showed a tendency to deteriorate from pre to post-exercise (74 ± 10.9 s vs. 78 ± 10.4 s; P=0.08); however, there were no differences in skill between trials. There was a trend for sprint performance to be faster in the FL trial (2.80 ± 0.16 s vs. 2.86 ± 0.16; P=0.058). Adjusted sweat loss was similar between fluid conditions (FL 1.5 ± 0.3 L vs. NF 1.4 ± 0.2 L; P=0.155), but total body mass loss was significantly greater (P<0.001) during the NF trial, equating to mean percentage decreases in body mass of 0.4 ± 0.3% and 1.8 ± 0.3% in the FL and NF trials, respectively. Ratings of perceived exertion were similar between fluid conditions, however, perception of thirst drive was considerably greater during the NF trial (P=0.012).

Conclusions: The decline in soccer skill over time was not attenuated by fluid intake in female soccer players. However, sprint performance may deteriorate when fluid losses and thirst drive are greater.


Keywords: Soccer, Endurance Performance, Dehydration