Effect of Dehydration of Soccer Match Performance

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It is well known that high environmental temperature with increased humidity have adverse effects on physical performance.

Purpose:

Aim of this study was to investigate the effect of dehydration on soccer match performance in matches played in hot ambient temperature.

Methods:

2 heat unacclimated soccer teams were played matches in a hot environment (environmental temperature and relative humidity of the 1st and 2nd matches were: 36.0 ± 0.2 °C and 60.6 ± 0.5 % and 34.0 ± 0.5 °C and 62.0 ± 0.0 % respectively) (mean ± SD). The first team played the match in a dehydrated state (D) where as the second team was in a euhydrated state (E). The players’ hydration state was evaluated from urine specific gravity and their match activity was recorded by a global positioning system. Thermosensor pills were used for body core temperature (Tc) measurements.

Results:

Pre-match urine specific gravity values for D and E groups were 1030 ± 0 and 1017 ± 10 respectively. The highest Tc value was recorded during the last ten minutes of the first half with no significant difference between D and E (39.6 ± 0.3 versus 39.5 ± 0.9 °C respectively). Total distance covered in the first and second halves of the D match was 4272 ± 527 and 3736 ± 358 m respectively. The players covered 3874 ± 270 m in the first and 4061 ± 392 m in the second halves of the E match. D match players’ running performance reduced significantly in the second half of the match (1948 ± 481 m and 1383 ± 377 m in the first and second halves of the match respectively, p<0.05). However the difference between the distances covered with running in the first and second halves of the E match was not significant (1629 ± 292 m and 1645 ± 277 m for the first and second halves of the match respectively).

Conclusion:

The results of our study had pre-match hydration level is not enough to reduce body core temperature in a match played in a hot environmental condition. On the other hand, regular hydration may help the players to protect their physical performance and health status.

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