

## **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:  $36.0 \pm 0.2$  °C and  $60.6 \pm 0.5$  % and  $34.0 \pm 0.5$  °C and  $62.0 \pm 0.0$  % respectively) (mean  $\pm$  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 (T<sub>c</sub>) measurements.

Results:

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