Hydration status and performance during two-a-day summer soccer training sessions with female athletes

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Introduction

- 50% of all athletes start practice and competitions in a dehydrated state.
- 9,000 high school athletes are treated annually for heat-related illness.
- Dehydration can lead to a decrease in performance and an increase in the risk of heat-related illness.

Method

- Received IRB approval and informed consents from 15 DIII female soccer players in a cross-over study.
- Participants were assigned water or Gatorade on day 1 and received the opposite on day 2.
- Body weight and urine was collected before and after each practice session.
- Fluid consumption and urine osmolalities were recorded.
- Performance was measured using the Loughborough Soccer Passing Test (LSPT) before the first session and after the second session.

Results

- Greater dehydration lead to a significant increase in penalty times (mistakes) and total time on LSPT (p=0.046, p=0.074 respectively).
- Average fluid intake was greater when water (48.4 oz) was being consumed compared to Gatorade (37.9 oz, p=0.104).
- The players that consumed more water also arrived more dehydrated than the players consuming Gatorade (742.4 mOsm/kg, 681.8 mOsm/kg respectively).

Conclusions

- Dehydration appears to decrease performance.
- Penalty time (mistakes) increases as dehydration increases.
- Dehydration compromises performance enough to make a difference in a game even if the effects are not always statistically significant.

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Works Cited