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

Kristina Burk

College of Saint Benedict/Saint John's University

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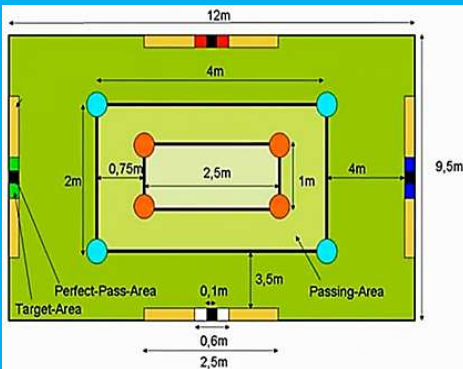
Hydration Status and Performance During Two-a-Day Summer Soccer Training Sessions with Female Athletes

Introduction

- 50% of all athletes start practice and competitions in a dehydrated state¹
- 9,000 high school athletes are treated annually for heat related illness²
- Dehydration can lead to a ↓ performance and an ↑ risk of heat related illness

Purpose

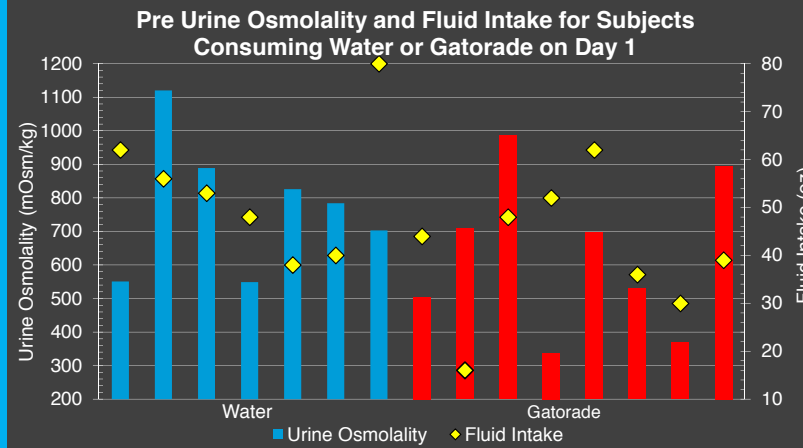
- Determine the relationship between hydration status and performance



Methods

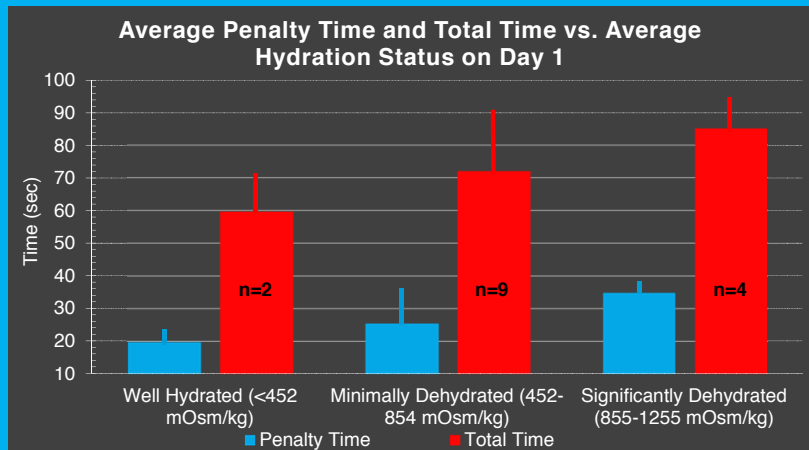
- Received IRB approval and informed consents from 15 DIII female soccer players in cross-over study
- Participants were assigned water or Gatorade on day 1 and received opposite on day 2
- Body weight and urine was collected before and after each practice session
- Fluid consumption and urine osmolalities were recorded
- Performance was measured using the Loughborough Soccer Passing Test (LSPT) before the first session and after the second session³

Kristina Burk; Amy Olson PhD, RD, LD
College of Saint Benedict/Saint John's University
Nutrition & Biology Departments



Results

- Greater dehydration lead to a significant ↑ 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)

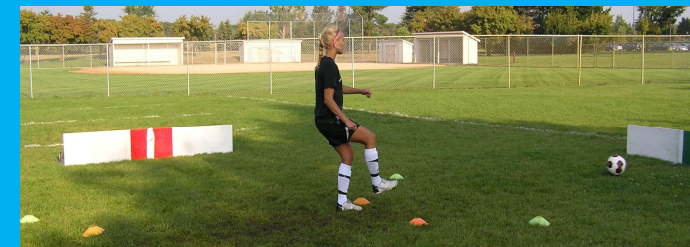


Conclusions

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

Acknowledgments

I would like to thank Carol-Howe Veenstra, Steve Kimble, the St. Ben's Soccer team, Kelsie Larson, Hannah Maxbauer, Don Fischer, Mani Campos, and Richard Wielkiewicz for their help and support.



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