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 state.
- 9,000 high school athletes are treated annually for heat related illness.
- Dehydration can lead to a performance and an ↑ risk of heat related illness.

**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 session.

**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.

**Works Cited**