



Significant Risk of Dehydration in Young Soccer Players



Abby Milton, A. Olson, Ph.D, R.D., L.D., M. Campos, Ph.D.
College of Saint Benedict/Saint John's University
Department of Nutrition

Introduction



Purpose

To assess the risk of dehydration in youth soccer players and assess their knowledge of fluid requirements.

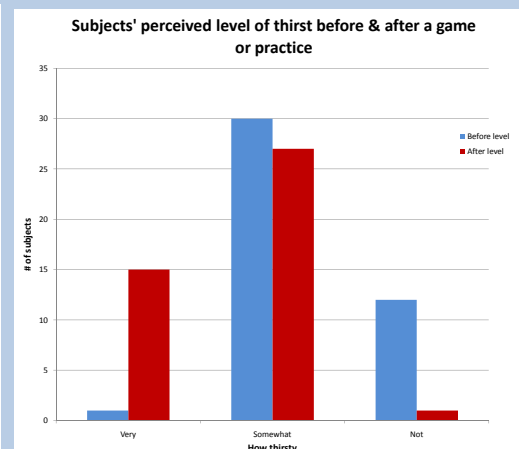
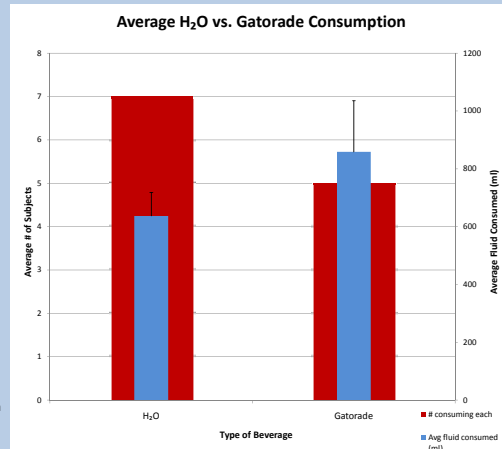
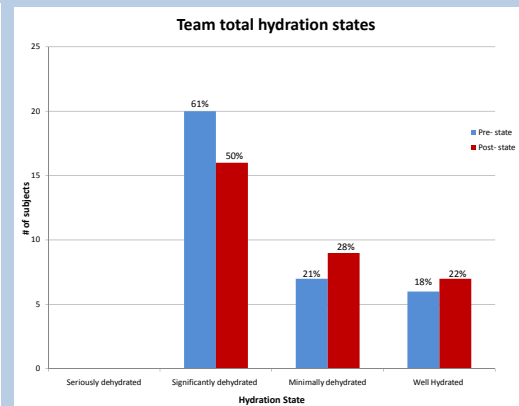
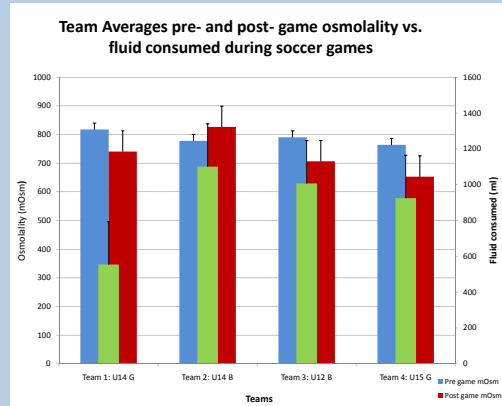
Results



Results

- Only 18% of the total number of subjects came to their games well hydrated
- 61% of girls and 57% of boys started *significantly dehydrated* (7).
- The choice between water and Gatorade was approximately 50/50;
 - 14 chose water
 - 13 chose Gatorade
 - 6 alternated beverages
- Those consuming Gatorade drank approximately 310 ml more fluid.
- Fluid consumption during the game should have been between 1200-1800 ml, but average fluid consumption was only 881±240 ml
- 46% of girls and 47% of boys were still significantly dehydrated after their games.
- Most subjects (70%) reported being thirsty pre-competition.
- The survey revealed these factors would improve subjects' fluid consumption:
 - 63% thought *more breaks*
 - 35% suggested *flavored drinks and/or more drinks*
 - 19% suggested more *time* during breaks
 - 14% suggested more bathrooms [port-a-potties]

Procedure



Conclusions

- Most players (82%) started their games dehydrated, which places them at risk to develop heat-related illnesses
- Fluid consumption during the game was inadequate for most players; they failed to drink sufficient fluids to improve their status during the game
- Coaches, parents, and players must take precautions to prevent dehydration and consider providing more breaks, time to drink, and flavored drinks during a practice or game situation.

Acknowledgements

- GCSA and CMYSA St. Cloud soccer associations for their participation
- The CSB-SJU Summer Undergraduate Research Program

References



- Rowland, T. (2008). Thermoregulation during exercise in the heat in children: old concepts revisited. *Journal of Applied Physiology*, 105, 718-724.
- Bar-Or, O. (1994). Children's Responses to Exercise in Hot Climates: Implications for Performance and Health. *Gatorade Sports Science Exchange*, 7(2), 49.
- Climatic Heat Stress and the Exercising Child and Adolescent. (2007). *Pediatrics*, 106, 158-159.
- Falk, B., & Dotan, R. (2008). Children's thermoregulation during exercise in the heat-revisited. *Applied Physiology of Nutrition and Metabolism*, 33, 420-427.
- Inoue, Y., Kuwahara, T., & Araki, T. (2004). Maturation- and Aging-related Changes in Heat Loss Effector Function. *Journal of Physiological Anthropology and Applied Human Science*, 23(6), 289-294.
- Oded, B.-O., & Wilk, B. (1996). Water and Electrolyte Replenishment in the Exercising Child. *International Journal of Sport Nutrition*, 6, 93-99.
- Casa, D. J., Armstrong, L. E., Hillman, S. K., Montain, S. J., Reiff, R. V., Rich, B. S., et al. (2000). NATA Position Statement: Fluid Replacement for Athletes. *Journal of Athletic Training*, 35(2), 212-224.