National Athletic Trainers' Association Links

- NATA Home
- Online Manuscript Submisson and Review
- Advertising
- Facts & Figures
- Editor-in-Chief
- Journal Editors
- Editorial Board
- NATA Position Statements
- PubMed Central
- Search PubMed
- Contact Us

Related Articles

Articles Citing this Article

Google Scholar

Search for Other Articles By Author

- Stella L. Volpe
- Kristen A. Poule
- Erica G. Bland

Search in:

- Athletic Training

Search

Previous Article Volume 44, Issue 6 (November 2009) Next Article

Add to Favorites Share Article Export Citations

Track Citations Permissions

Full-text PDF

Article Citation:
Stella L. Volpe, Kristen A. Poule, Erica G. Bland (*2009*) Estimation of Prepractice Hydration Status of National Collegiate Athletic Association Division I Athletes. Journal of Athletic Training: November 2009, Vol. 44, No. 6, pp. 624-629.

doi: 10.4085/1062-6050-44.6.624

Original Research

Estimation of Prepractice Hydration Status of National Collegiate Athletic Association Division I Athletes

Stella L. Volpe, PhD RD LDN FACSM[1], Kristen A. Poule, BS[2], and Erica G. Bland, BSN[1]

[1]University of Pennsylvania, Philadelphia, PA
[2]University of Massachusetts, Amherst, MA

Abstract

Context: To our knowledge, no one has compared the prepractice hydration status of male and female National Collegiate Athletic Association (NCAA) Division I athletes or has studied the effects of the menstrual cycle phase on women's prepractice hydration status.

Objective: To report prepractice hydration status of collegiate athletes and determine the factors that might influence that status.

Design: Cross-sectional, descriptive study.

Setting: University sports team practices.

Patients or Other Participants: Participants included 138 male and 125 female athletes (age = 19.9 ± 1.3 years, height = 165.8 ± 42.9 cm, mass = 77.4 ± 17.5 kg) from an NCAA Division I New England university.

Intervention(s): One spontaneously voided (spot) urine sample was collected from each participant before his or her team practice and was measured 2 times.

Main Outcome Measure(s): A refractometer was used to analyze the amount of light that passed through a small drop of urine and assess urine specific gravity. Fluid intake and menstrual history for women were also collected. Three hydration-status groups were defined based on the American College of Sports Medicine and National Athletic Trainers' Association criteria: (1) *euhydrated*, which was urine specific gravity less than 1.020; (2) *hypohydrated*, from 1.020 to 1.029; and (3) *significantly hypohydrated*, equal to or more than 1.030.

Results: Thirteen percent of student-athletes appeared significantly hypohydrated, with a mean urine specific gravity of 1.031 ± 0.002 (χ^2 = 12.12, P < .05); 53% appeared hypohydrated, with a mean urine specific gravity of 1.024 ± 0.003 (χ^2 = 12.12, P < .05); and 34% appeared euhydrated, with a mean urine specific gravity

Volume 44, Issue 6 (November 2009)

< Previous Next >

Current Issue
Available Issues

Journal Information

Print ISSN	1062-6050
eISSN	1938-162X
Frequency	Bimonthly:

January/February
March/April
May/June
July/August
September/October
November/December

of 1.012 ± 0.005 (χ^2 = 0.03, P > .05). A greater percentage of men (47%) than women (28%) were hypohydrated (χ^2 = 8.33, P < .05). In women, no difference was evident between the luteal and follicular phases of their menstrual cycles (χ^2 = 0.02, P > .05).

Conclusions: Before activity, athletes were hypohydrated at different levels. A greater percentage of men than women were hypohydrated. Menstrual cycle phase did not appear to affect hydration in women.

Keywords: dehydration, sex, hypohydration, refractometer, sports, urine specific gravity

Stella L. Volpe, PhD, RD, LDN, FACSM, and Kristen A. Poule, BS, contributed to conception and design; acquisition and analysis and interpretation of the data; and drafting, critical revision, and final approval of the article. Erica G. Bland, BSN, contributed to analysis and interpretation of the data and drafting, critical revision, and final approval of the article.

Address correspondence to Stella L. Volpe, PhD, RD, LDN, FACSM, University of Pennsylvania, Division of Biobehavioral and Health Sciences, School of Nursing, Claire M. Fagin Hall, 418 Curie Boulevard, Philadelphia, PA 19104-4217. Address e-mail to svolpe@nursing.upenn.edu

top