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

- Rebecca M. Lopez
- Michelle A. Cleary
- Leon C. Jones
- Ron E. Zuri

Search in:

- Athletic Training

Search

Previous Article Volume 43, Issue 1 (January/February 2008) Next Article

Add to Favorites Share Article Export Citations

Track Citations Permissions

Full-text PDF

Article Citation:
Rebecca M. Lopez, Michelle A. Cleary, Leon C. Jones, Ron E. Zuri (*2008*) Thermoregulatory Influence of a Cooling Vest on Hyperthermic Athletes. Journal of Athletic Training: January/February 2008, Vol. 43, No. 1, pp. 55-61.

doi: 10.4085/1062-6050-43.1.55

Original Research

Thermoregulatory Influence of a Cooling Vest on Hyperthermic Athletes

Rebecca M. Lopez, MS, ATC[1], Michelle A. Cleary, PhD, ATC[2], Leon C. Jones, MS, ATC[3], and Ron E. Zuri, MS, ATC[4]

[1]University of Connecticut, Storrs, CT
[2]University of Hawai'i, Honolulu, HI
[3]Lancaster High School, Lancaster, TX
[4]Broward Health, Coral Springs, FL

Abstract

Context: Athletic trainers must have sound evidence for the best practices in treating and preventing heat-related emergencies and potentially catastrophic events.

Objective: To examine the effectiveness of a superficial cooling vest on core body temperature (T_c) and skin temperature (T_{sk}) in hypohydrated hyperthermic male participants.

Design: A randomized control design with 2 experimental groups.

Setting: Participants exercised by completing the heat-stress trial in a hot, humid environment (ambient temperature = 33.1 ± 3.1°C, relative humidity = 55.1 ± 8.9%, wind speed = 2.1 ± 1.1 km/hr) until a T_c of 38.7 ± 0.3°C and a body mass loss of 3.27 ± 0.1% were achieved.

Patients or Other Participants: Ten healthy males (age = 25.6 ± 1.6 years, mass = 80.3 ± 13.7 kg).

Intervention(s): Recovery in a thermoneutral environment wearing a cooling vest or without wearing a cooling vest until T_c returned to baseline.

Main Outcome Measure(s): Rectal T_c, arm T_{sk}, time to return to baseline T_c, and cooling rate.

Results: During the heat-stress trial, T_c significantly increased (3.6%) and, at 30

Volume 43, Issue 1 (January/February 2008)

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

minutes of recovery, T_c had decreased significantly (2.6%) for both groups. Although not significant, the time for return to baseline T_c was 22.6% faster for the vest group (43.8 ± 15.1 minutes) than for the no-vest group (56.6 ± 18.0 minutes), and the cooling rate for the vest group (0.0298 ± 0.0072°C/min) was not significantly different from the cooling rate for the no-vest group (0.0280 ± 0.0074° C/min). The T_{sk} during recovery was significantly higher (2.1%) in the vest group than in the no-vest group and was significantly lower (7.1%) at 30 minutes than at 0 minutes for both groups.

Conclusions: We do not recommend using the cooling vest to rapidly reduce elevated T_c. Ice-water immersion should remain the standard of care for rapidly cooling severely hyperthermic individuals.

Keywords: hyperthermia, hypohydration, heatstroke

Rebecca M. Lopez, MS, ATC, contributed to conception and design; acquisition and analysis and interpretation of the data; and drafting, critical revision, and final approval of the article. Michelle A. Cleary, PhD, ATC, contributed to conception and design; analysis and interpretation of the data; and drafting, critical revision, and final approval of the article. Leon C. Jones, MS, ATC, contributed to conception and design; acquisition and analysis and interpretation of the data; and drafting, critical revision, and final approval of the article. Ron E. Zuri, MS, ATC, contributed to conception and design; acquisition of the data; and drafting, critical revision, and final approval of the article.

Rebecca M Lopez, MS, ATC, Department of Kinesiology, University of Connecticut, 2095 Hillside Road, Unit 1110, Storrs, CT 06269, e-mail: rebecca.lopez@uconn.edu

Cited by

Carly Brade, Brian Dawson, Karen Wallman, and Ted Polglaze. (2010) Postexercise Cooling Rates in 2 Cooling Jackets. *Journal of Athletic Training* **45**:2, 164-169 Online publication date: 1-Mar-2010.
Abstract | Full Text | PDF (257 KB)

top