

National Athletic Trainers' Association Links

- [NATA Home](#)
- [Online Manuscript Submission and Review](#)
- [Advertising](#)
- [Facts & Figures](#)
- [Editor-in-Chief](#)
- [Journal Editors](#)
- [Editorial Board](#)
- [NATA Position Statements](#)
- [PubMed Central](#)
- [Search PubMed](#)
- [Contact Us](#)

◀ [Previous Article](#) [Volume 45, Issue 2 \(March/April 2010\)](#) [Next Article](#) ▶

 [Add to Favorites](#)  [Share Article](#)  [Export Citations](#)

 [Track Citations](#)  [Permissions](#)

[Full-text](#)

[PDF](#)

Article Citation:

Carly Brade, Brian Dawson, Karen Wallman, Ted Polglaze (2010) Postexercise Cooling Rates in 2 Cooling Jackets. *Journal of Athletic Training*: March/April 2010, Vol. 45, No. 2, pp. 164-169.

doi: 10.4085/1062-6050-45.2.164

Original Research

Postexercise Cooling Rates in 2 Cooling Jackets

Carly Brade, BSc (Hons)¹, Brian Dawson, PhD¹, Karen Wallman, PhD¹, and Ted Polglaze, MPE²

¹School of Sport Science, Exercise and Health, The University of Western Australia, Crawley, Western Australia

²Western Australian Institute of Sport, Claremont, Western Australia

Abstract

Context: Cooling jackets are a common method for removing stored heat accumulated during exercise. To date, the efficiency and practicality of different types of cooling jackets have received minimal investigation.

Objective: To examine whether a cooling jacket containing a phase-change material (PC17) results in more rapid postexercise cooling than a gel cooling jacket and a no-jacket (control) condition.

Design: Randomized, counterbalanced design with 3 experimental conditions.

Setting: Participants exercised at 75% $\dot{V}O_2$ max workload in a hot climate chamber (temperature = $35.0 \pm 1.4^\circ\text{C}$, relative humidity = $52 \pm 4\%$) for 30 minutes, followed by postexercise cooling for 30 minutes in cool laboratory conditions (ambient temperature = $24.9 \pm 1.8^\circ\text{C}$, relative humidity = $39\% \pm 10\%$).

Patients or Other Participants: Twelve physically active men (age = 21.3 ± 1.1 years, height = 182.7 ± 7.1 cm, body mass = 76.2 ± 9.5 kg, sum of 6 skinfolds = 50.5 ± 6.9 mm, body surface area = 1.98 ± 0.14 m², $\dot{V}O_2$ max = 49.0 ± 7.0 mL·kg⁻¹·min⁻¹) participated.

Intervention(s): Three experimental conditions, consisting of a PC17 jacket, a gel jacket, and no jacket.

Main Outcome Measure(s): Core temperature (T_C), mean skin temperature (T_{SK}), and T_C cooling rate ($^\circ\text{C}/\text{min}$).

Results: Mean peak T_C postexercise was $38.49 \pm 0.42^\circ\text{C}$, $38.57 \pm 0.41^\circ\text{C}$, and $38.55 \pm 0.40^\circ\text{C}$ for the PC17 jacket, gel jacket, and control conditions, respectively.

Volume 45, Issue 2 (March/April 2010)

< [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

Register for a Profile

Not Yet [Registered?](#)

Benefits of Registration Include:

- A Unique User Profile that will allow you to manage your current subscriptions (including online access)
- The ability to create favorites lists down to the article level
- The ability to customize email alerts to receive specific notifications about the topics you care most about and special offers

[Register Now!](#)

Related Articles

Articles Citing this Article

[Google Scholar](#)

Search for Other Articles By Author

- Carly Brade
- Brian Dawson
- Karen Wallman
- Ted Polglaze

Search in:

Athletic Training

Search

No differences were observed in peak T_C cooling rates among the PC17 jacket ($0.038 \pm 0.007^\circ\text{C}/\text{min}$), gel jacket ($0.040 \pm 0.009^\circ\text{C}/\text{min}$), and control ($0.034 \pm 0.010^\circ\text{C}/\text{min}$, $P > .05$) conditions. Between trials, no differences were calculated for mean T_{Sk} cooling.

Conclusions: Similar cooling rates for all 3 conditions indicate that there is no benefit associated with wearing the PC17 or gel jacket.

Keywords: [PC17](#), [hyperthermia](#), [core temperature](#), [skin temperature](#)

Karen Wallman, PhD, School of Sport Science, Exercise and Health, The University of Western Australia, 35 Stirling Highway, Crawley, Western Australia 6009, e-mail: kwallman@cylene.uwa.edu.au

top ▲