

Medicine & Science in Sports & Exercise

Issue: Volume 42(5) Supplement 1, May 2010, p 590

Copyright: ©2010The American College of Sports Medicine

Publication Type: [D-35 Free Communication/Poster - Occupational Labor and Health Risk: JUNE 3, 2010 1:00 PM - 6:00 PM: ROOM: Hall C]

DOI: 10.1249/01.MSS.0000385471.74662.f6

ISSN: 0195-9131

Accession: 00005768-201005001-01742

[D-35 Free Communication/Poster - Occupational Labor and Health Risk: JUNE 3, 2010 1:00 PM - 6:00 PM: ROOM: Hall C]

Effect Of On-scene Rehabilitation On Psychological And Cognitive Responses To Short-term Firefighting Activity: 2334 Board #213 June 3 2:00 PM - 3:30 PM

Petruzzello, Steven J. FACSM¹; Horn, Gavin²; Fahey, George¹; Goldstein, Eric²; Smith, Denise L. FACSM³

Author Information

¹University of Illinois, Urbana, IL. ²University of Illinois, Champaign, IL. ³Skidmore College, Saratoga Springs, NY.

Email: petruzzello@illinois.edu

(No disclosure reported)

Firefighters (FF) routinely perform arduous work in extreme environmental temperatures. However, little is known about the most effective methods to cool, rehydrate and reverse imbalances caused by working in such stressful environments.

PURPOSE: To investigate the effects of different On-Scene Rehabilitation (OSR) protocols on subsequent psychological recovery along with cognitive function.

METHODS: Male FF ($N=17$; M age=24.5±4.7 yrs) free of known cardiovascular disease participated in 18 minutes of simulated firefighting (FF) activity (stair climbing, forcible entry, searching, advancing a line) in a training structure that contained live fires wearing standard turnout gear and an air pack on 2 separate days. During the "control" trial (meant to reflect OSR typically done at a fire scene), following simulated FF activity FFs removed their helmet, hood, gloves, and bunker coat and were provided with only water. During the "enhanced" OSR trial, following simulated FF activity FFs removed all of turn-out gear (including bunker coat, pants), consumed 1 L of water and 0.5 L of sport drink, and were aggressively cooled using a misting fan or cold towels. Psychological (AD ACL) and cognitive function measures [reaction times (RT) on a decision-making task] were obtained immediately before and after FF activities and following 2 hrs of recovery.

RESULTS: Firefighting activity resulted in significant increases in Energy (+1.9 units) and Tension (+0.7 units) along with significant decreases in Tiredness (-1.9 units) and Calmness (-2.5 units) from pre- to post-activity, with subsequent returns to pre-activity levels after recovery. RTs were significantly faster following activity (-25.2 msec), and then returned to pre-activity level by 2 hrs post-activity. There were no significant differences between the OSR protocols.

CONCLUSION: Firefighting resulted in significant changes in psychological and cognitive function measures; however, the effect of different OSR was negligible compared to the effects of the firefighting activity itself.

Supported by NIOSH Grant R03 OH009111-01.

Copyright (c) 2000-2014 Ovid Technologies, Inc.

[Terms of Use](#) | [Support & Training](#) | [About Us](#) | [Contact Us](#)

Version: OvidSP_UI03.12.00.116, SourceID 60384