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Award Number: MIPR2DCJWP2055

TITLE: Body Heat Storage and Work in the Heat

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REPORT DATE: May 2003

TYPE OF REPORT: Annual

PREPARED FOR: U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

DISTRIBUTION STATEMENT: Approved for Public Release;
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20040608 127

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 074-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE May 2003	3. REPORT TYPE AND DATES COVERED Annual (1 May 2002 - 30 Apr 2003)	
4. TITLE AND SUBTITLE Body Heat Storage and Work in the Heat			5. FUNDING NUMBERS MIPR2DCJWP2055	
6. AUTHOR(S) James A. Hodgdon, Ph.D.				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Health Research Center San Diego, California 92186-5122 <i>E-Mail:</i> hodgdon@nhrc.navy.mil			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Medical Research and Materiel Command Fort Detrick, Maryland 21702-5012			10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for Public Release; Distribution Unlimited			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 Words) The initial period was spent preparing supporting information for the award, gathering the parts and supplies for the construction of the two calorimetry systems, convening of a kickoff meeting for the project, and restructuring of the proposal to allow University of Ottawa to assume responsibility as the primary Performing Organization				
14. SUBJECT TERMS Exercise, heat, human thermal response, heat storage, body heat content, calorimeter, liquid-cooled garments, air calorimeter, indirect calorimetry, open-circuit spirometry, muscle temperature			15. NUMBER OF PAGES 5	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT Unlimited	

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INTRODUCTION:

The development of heat injury during military ground operations in hot environments is a serious risk, particularly when operations in chemical defense ensembles are required. The objective of the research is to develop a model of body heat storage from readily available field and clinical measures that can be used to predict response to work in the heat, with or without the inclusion of impermeable or semi-impermeable garments. Unique aspects of these models will be the use of a three-compartment approach, in which muscle-mass temperature will be measured in addition to skin and non-muscle core temperature values, and measurement of heat storage by direct and indirect calorimetry.

BODY:

Accomplishments

Supporting documentation from all the institutions involved in the project was collected and provided to the project sponsors.

Funding was received 12 May 2002.

Parts for the liquid-cooled garment calorimetry system were located, plans for system repair were developed, and rebuilding of the system was begun.

Parts for the air calorimeter were located at the University of Ottawa, and a space was identified to house the calorimeter.

A kickoff meeting was held at the University of Ottawa in July 2002. Plans for the construction of the air calorimeter were reviewed and refined.

It was determined in July 2002 that a suitable mechanism for continuing the funds for this project at NHRC beyond FY2002 could not be found. It was decided to restructure the project with University of Ottawa becoming the primary Performing Organization. Approval was obtained from USAMRAA to pursue this approach. NHRC returned \$890,516.30 of the original award of \$1,117,448.00 to USAMRAA, holding \$226,931.70 to cover first year costs, and anticipated supplies, equipment and travel for NHRC for the remainder of the project.

KEY RESEARCH ACCOMPLISHMENTS:

- None. Assembly of the systems required for conduct of this research is not yet complete. The calorimetry systems to be used in this research are complex, and require the assembly and testing of a large number of control subsystems, each of which must function properly for precise system control and measurement acquisition.

REPORTABLE OUTCOMES:

- None. Efforts on this project focused on matters related to grant administration and initial stages of equipment setup. With completion of the assembly of the calorimeter systems, descriptive reports will be produced.

CONCLUSIONS:

The initial period was spent preparing supporting information for the award, gathering the parts and supplies for the construction of the two calorimetry systems, convening of a kickoff meeting for the project, and restructuring of the proposal to allow University of Ottawa to assume responsibility as the primary Performing Organization.

REFERENCES:

None

APPENDICES:

None