Association of Tobacco Use with Injuries Among Infantry Soldiers Carrying Loads on a 100-Mile Road March


U.S. Army Research Institute of Environmental Medicine
Natick, MA 01760-5007

12a. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for public release; distribution is unlimited

13. ABSTRACT (Maximum 200 words)
PURPOSE: To examine the effect of tobacco use on injuries sustained during a physically demanding 100-mile road march.
METHODS: A study was conducted with 212 infantry soldiers who marched with an Army backpack (mean weight 28.3+4 kg) 20 miles per day for five days. Prior to the march, all soldiers completed a demographic (i.e. age, race) and tobacco use questionnaire. All march-related injuries were recorded by physician assistants when a soldier reported to a medical station along the road march course. In addition to the overall analysis of injury, foot blisters were also analyzed separately. A logistic regression model was used to examine the interrelationships between several factors: smoking habits (current smokers, quitters), chewing tobacco use, age, race, and fitness (maximum number of situps in two minutes, maximum numbers of pushups in two minutes, and a two-mile timed run).
RESULTS: Mean age was 21.4+3.9 years. Thirty-three percent (70/212) of the soldiers suffered one or more injuries (63.0% of these were blisters). Odds ratios and confidence intervals for any injury and blisters were calculated. The odds of (truncated after 200 words)

Tobacco use, road march, musculoskeletal injuries

17. SECURITY CLASSIFICATION OF REPORT
Unclassified

18. SECURITY CLASSIFICATION OF THIS PAGE
Unclassified

19. SECURITY CLASSIFICATION OF ABSTRACT
Unclassified

20. LIMITATION OF ABSTRACT
U

DTIC QUALITY INSPECTED I
### General Instructions for Completing SF 298

The Report Documentation Page (RDP) is used in announcing and cataloging reports. It is important that this information be consistent with the rest of the report, particularly the cover and title page. Instructions for filling in each block of the form follow. It is important to stay within the lines to meet optical scanning requirements.

| Block 1. | **Agency Use Only (Leave blank)**. |
| Block 2. | **Report Date.** Full publication date including day, month, and year, if available (e.g. 1 Jan 88). Must cite at least the year. |
| Block 3. | **Type of Report and Dates Covered.** State whether report is interim, final, etc. If applicable, enter inclusive report dates (e.g. 10 Jun 87 - 30 Jun 88). |
| Block 4. | **Title and Subtitle.** A title is taken from the part of the report that provides the most meaningful and complete information. When a report is prepared in more than one volume, repeat the primary title, add volume number, and include subtitle for the specific volume. On classified documents enter the title classification in parentheses. |
| Block 5. | **Funding Numbers.** To include contract and grant numbers; may include program element number(s), project number(s), task number(s), and work unit number(s). Use the following labels: C - Contract PR - Project G - Grant TA - Task PE - Program WU - Work Unit Element Accession No. |
| Block 6. | **Author(s).** Name(s) of person(s) responsible for writing the report, performing the research, or credited with the content of the report. If editor or compiler, this should follow the name(s). |
| Block 7. | **Performing Organization Name(s) and Address(es).** Self-explanatory. |
| Block 8. | **Performing Organization Report Number.** Enter the unique alphanumeric report number(s) assigned by the organization performing the report. |
| Block 9. | **Sponsoring/Monitoring Agency Name(s) and Address(es).** Self-explanatory. |
| Block 10. | **Sponsoring/Monitoring Agency Report Number.** (If known) |
| Block 11. | **Supplementary Notes.** Enter information not included elsewhere such as: Prepared in cooperation with...; Trans. of...; To be published in... When a report is revised, include a statement whether the new report supersedes or supplements the older report. |
| Block 12a. | **Distribution/Availability Statement.** Denotes public availability or limitations. Cite any availability to the public. Enter additional limitations or special markings in all capitals (e.g. NOFORN, REL, ITAR). |
| Block 12b. | **Distribution Code.** |
| Block 13. | **Abstract.** Include a brief (Maximum 200 words) factual summary of the most significant information contained in the report. |
| Block 14. | **Subject Terms.** Keywords or phrases identifying major subjects in the report. |
| Block 15. | **Number of Pages.** Enter the total number of pages. |
| Block 16. | **Price Code.** Enter appropriate price code (NTIS only). |
| Blocks 17. - 19. | **Security Classifications.** Self-explanatory. Enter U.S. Security Classification in accordance with U.S. Security Regulations (i.e., UNCLASSIFIED). If form contains classified information, stamp classification on the top and bottom of the page. |
| Block 20. | **Limitation of Abstract.** This block must be completed to assign a limitation to the abstract. Enter either UL (unlimited) or SAR (same as report). An entry in this block is necessary if the abstract is to be limited. If blank, the abstract is assumed to be unlimited. |
PUBLICATION AND TECHNICAL PRESENTATION CLEARANCE

1. Report/Presentation Title:
   Association of Tobacco Use with Injuries Among Infantry Soldiers Carrying Loads on a 100-Mile Road March

2. Authors: KL Reynolds, Amoroso, PJ, Dettori, JR, Witt, CE, Knapik, JJ and Lavin, PT

3. Type of Document: [ ] Abstract [ ] Poster [ ] Presentation [ ] Book Chapter
   [ ] Journal Article [ ] Technical Report [ ] Review Article

4. Proposed journal or publication:

5. Meeting name, dates & location: Third International Conference on Injury Prevention and Control, 18-22 Feb 96, Melbourne, Australia

6. The attached material contains/does not contain classified material. It does/does not contain any potentially sensitive or controversial material.

   [Signature]
   First Author

   [Signature]
   Second Author

7. Editorial Comments: [ ] have/have not been requested:

   ____________________________  ____________________________
   Technical Editor               Date

8. Recommend Clearance:

   ____________________________
   Research Division Chief

   ____________________________
   Research Director

9. [ ] Clearance is granted. [ ] Clearance is not granted.
   [ ] This must be forwarded to USAMRDC for clearance.

   ____________________________
   JOEL T. HIATT
   Colonel, MS
   Commanding

10. STO/Task number: [ ] Budget Project No. 392262271K7C

11. USARIEM Clearance Number: 995-57 (Abs) by RPOD 6 Mar 95 (Date)

NATICK FORM 1486
1 Jul 94

Previous edition is obsolete.
ASSOCIATION OF TOBACCO USE WITH INJURIES AMONG INFANTRY SOLDIERS CARRYING LOADS ON A 100-MILE ROAD MARCH

Reynolds KL; Amoroso PJ; Dettori JR; Witt CE; Knapik JJ; Lavin PT
Occupational Medicine Division, United States Army Research Institute of Environmental Medicine, Natick, MA, USA.

PURPOSE: To examine the effect of tobacco use on injuries sustained during a physically demanding 100-mile road march.

METHODS: A study was conducted with 212 infantry soldiers who marched with an Army backpack (mean weight 28.3±4 kg) 20 miles per day for five days. Prior to the march, all soldiers completed a demographic (i.e., age, race) and tobacco use questionnaire. All march-related injuries were recorded by physician assistants when a soldier reported to a medical station along the road march course. In addition to the overall analysis of injury, foot blisters were also analyzed separately. A logistic regression model was used to examine the interrelationships between several factors: smoking habits (current smokers, quitters), chewing tobacco use, age, race, and fitness (maximum number of situps in two minutes, maximum number of pushups in two minutes, and a two-mile timed run).

RESULTS: Mean age was 21.4±3.9 years. Thirty-three percent (70/212) of the soldiers suffered one or more injuries (63.0% of these were blisters). Odds ratios and confidence intervals for any injury and blisters were calculated. The odds of incurring injuries was significantly higher in current smokers (controlling for age and race).

<table>
<thead>
<tr>
<th></th>
<th>Any Injuries</th>
<th>Blisters</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR (95%CI)</td>
<td>OR (95%CI)</td>
</tr>
<tr>
<td>Current smoker</td>
<td>2.57(1.41,4.68)</td>
<td>2.23(1.11,4.50)</td>
</tr>
<tr>
<td>Quitters</td>
<td>0.60(0.06,5.50)</td>
<td>1.03(0.11,9.60)</td>
</tr>
<tr>
<td>Current chewer</td>
<td>1.16(0.62,2.18)</td>
<td>0.93(0.44,1.95)</td>
</tr>
</tbody>
</table>

CONCLUSION: The incidence of injuries is high during a physically demanding activity such as an endurance road march. Current smokers were at a higher risk for injuries. No significant effect from chewing tobacco was demonstrated in this population.