



Wildland Firefighter

Health & Safety Report



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Issue No. 11

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Background

This report, the 11th in a series, reviews activities related to the Missoula Technology and Development Center's (MTDC) project on wildland firefighter health and safety. The project focuses on three areas:

- Work, rest, and fatigue: Determine work/rest guidelines, assignment length, and fatigue countermeasures for crews and overhead.
- Energy and nutrition: Improve the energy intake, nutrition, hydration, immune function, and health of wildland firefighters.
- Fitness and work capacity: Use work capacity and medical standards to ensure the health, safety, and productivity of wildland firefighters.

Intermittent Feeding

With the help of cooperators from the University of Montana Human Performance Laboratory, MTDC measured the energy expenditure of wildland firefighters and examined fire camp meals for energy and nutrients. Energy and nutrient requirements of firefighters will be met so long as firefighters eat a variety of foods and increase energy intake to match caloric expenditure. Dietary recommendations were published in an MTDC tech tip, *Feeding the Wildland Firefighter* (2002, [0251-2323-MTDC](#)).



Firefighters select shift food during a MTDC/University of Montana field study. The shift food group performed more work than the sack lunch group, even though both groups consumed the same amount of energy.

Intermittent feeding throughout the shift maintains blood glucose and work output.

We have also studied the value of carbohydrate supplementation and intermittent feeding throughout the work shift as ways to maintain work output. These studies and work with the U.S. Army Research Institute for Environmental Medicine led to a recommendation to consider shift food as an alternative to the traditional sack lunch. Shift food is individually packaged, snack-size food items that are eaten intermittently throughout the shift to maintain blood glucose and work output. Intermittent feeding also helps maintain immune function, a positive mood, and could improve decisionmaking and safety. The Featured Topic section in this issue examines shift food.

The Research section summarizes findings from studies conducted on firefighters during the 2006 fire season. The Risk Management section introduces a nutrition education program designed for wildland firefighters and incident management team members: *Eating for Health and Performance: The Wildland Firefighter*. The program includes a PowerPoint presentation, a brochure, and an instructor's guide. The Field Notes section, based on a summer field study, includes advice on cleaning a water bottle or a sipping hydration system that includes a bladder and tubing.



**Firefighters eating shift food performed 41 percent
more work late in the shift.**

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