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Additional Fatigue Countermeasures

Fatigue countermeasures have been studied in military populations and endurance athletes. Although many questions remain to be answered, work cycling is one area of interest that may yield positive benefits for wildland firefighters.

Work Cycling—Athletes and coaches have long understood that one of the most effective methods to counteract overtraining (accumulated fatigue) is to vary the training in both intensity and duration so that days of arduous activity are interspersed with less stressful days. This concept allows athletes to avoid illness and accumulated fatigue by scheduling time to recover between hard work periods. The result is reduced time lost to illness, improved alertness, increased total work, and higher productivity. The same principles should apply to wildland firefighters if stressful days are interspersed with less stressful days. This might be done for an entire crew or just for certain individuals. Most physically fit individuals can sustain 1 to 2 days of very arduous work, if they have a less stressful period (1 to 2 days) for recovery. Recovery days do not require inactivity, but do require a change of duty, generally to a duty with less total stress. Little is known about duty cycling for wildland firefighters, but further study might be beneficial. Recommendations for ways to vary the daily intensity and duration of arduous duty should be developed.

Fitness—Physical fitness is another known factor in accumulated fatigue in athletes and workers. When team members are asked to do similar training for extended periods, athletes who are physically fit generally exhibit fewer symptoms of accumulated stress than do individuals who are less fit. Research during the summer of 2001 with two type 1 crews suggested that the fit workers did more work (both in absolute terms and adjusted for body weight) and experienced less fatigue.

Fitness Recommendations for Wildland Firefighters

- Aerobic and muscular endurance training before the fire season that is maintained throughout the season would benefit firefighters who routinely work in situations requiring multiple extended arduous work shifts with moderate to high energy output. Fitness standards that are higher than the pack test (walking 3 miles with a 45-pound pack in 45 minutes) should be

considered. A fitness training manual should be available to type 1 crews.

- Individuals who have been relatively sedentary but who wish to take the pack test should begin a training program gradually and slowly build up to the work capacity required for a wildland firefighter. The pack test should be considered a minimum fitness requirement. Individuals who will be working on the fireline should be encouraged to improve their aerobic (endurance) and muscular fitness.
- The onset of fatigue as a result of work depends on the individual and is related to many factors. Methods to monitor fatigue within fire crews need to be developed to determine when individuals or entire crews need time to recover.

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