

## ABSTRACT

Dietary supplements are routinely used by athletes in their quest for improved athletic performance. Recently, the concept of enhancing recovery following intense exercise has become more popular within the athletic community. Dietary supplementation with protein bars and carbohydrate beverages has been used effectively to promote immediate post-exercise recovery, but longer-term recovery strategies (days to weeks) have been used less frequently.

**PURPOSE:** The current study was conducted to evaluate the effect of a post-exercise recovery supplement containing branched-chain amino acids (BCAAs), glutamine, and beta-sitosterol, on measures of fatigue, mood, cold/flu symptoms, and muscle/joint pain during the 2 weeks following a marathon.

**METHODS:** Twenty-five subjects (7 women and 18 men) were randomly assigned to receive the supplement (S, n=14) or a matching placebo (P, n=11) in a double-blind fashion. Subjects consumed 8 capsules per day for 14 days immediately following completion of the Park City Marathon (average elevation 6650 ft). The standardized Profile of Mood States (POMS) questionnaire was used to evaluate Tension, Depression, Anger, Vigor, Fatigue, Confusion and Global Mood State during the 2-week period following the marathon. A standard health log was used to assess daily occurrence and severity of cold/flu symptoms, gastrointestinal complaints and degree of muscle/joint pain. Data were analyzed using two-tailed Student's t-tests with significance set at  $p < 0.05$ .

**RESULTS:** S had significantly lower scores for Tension (-31%,  $p=0.039$ ), Fatigue (-52%,  $p=0.009$ ) and Confusion (-24%,  $p=0.020$ ) and higher scores for Vigor (+38%,  $p=0.005$ ) and Global Mood (+16%,  $p=0.015$ ) compared to P. There were no differences between groups on measures of Depression or Anger. On measures of cold/flu symptoms, 20% of subjects in P reported symptoms, while none were reported in S. Reports of muscle/joint pain were reduced by 51% in S compared to P ( $p=0.007$ ) and subjects in S were able to resume normal training an average of 5 days earlier than subjects in P ( $p=0.033$ ).

**CONCLUSIONS:** Adequate recovery is important for competitive athletes, not only for the obvious benefits of being able to train and compete at a higher level, but also for the less obvious benefits of protecting the athlete from overtraining, illness and injury. Overall, these results strongly suggest that targeted dietary supplementation may be effective in enhancing recovery following intense exercise.