Applied nutritional investigation

Nutritional status of adventure racers

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Abstract

Objective: We describe the usual food intake, body composition, and biochemical profile of adventure racers during their training season and evaluate their energy and nutrient intake in relation to current recommendations for ultraendurance athletes.

Methods: Twenty-four adventure race athletes (18 men and 6 women), 24 to 42 y of age, participated in the study. Food intake was determined with a 3-d food record and body composition by plethysmography. Blood samples were obtained from all subjects for biochemical analyses. All assessments were made during the usual training phase.

Results: Female athletes had a higher body fat percentage than did male athletes (20.2 ± 5.7% versus 12.5 ± 3.5%). For men and women, food intake was high in protein (1.9 ± 0.5 g/kg in men, 2.0 ± 0.4 g/kg in women) and fat (1.6 ± 0.3 g/kg in men, 1.5 ± 1.3 g/kg in women). Carbohydrate intake of male athletes was at the lower limit of that recommended (5.9 ± 1.8 g/kg). For most vitamins and minerals, athletes’ intake was adequate, with the exception of magnesium, zinc, and potassium in men and women and vitamin E and calcium in women, which presented a high probability of being inadequate compared with reference values. High blood levels of total cholesterol and low-density lipoprotein cholesterol were found in female athletes (201.0 ± 44.7 and 104.1 ± 43.1 mg/dL, respectively) and all other biochemical analyses were within normal reference values.

Conclusion: The adventure racers presented an inadequate nutritional profile when compared with recommendations for endurance exercise. These athletes need to be educated about consuming an adequate diet to meet the nutritional needs of their activity. © 2007 Elsevier Inc. All rights reserved.

Keywords: Nutritional status; Ultraendurance; Adventure race; Athletes; Food intake

Introduction

Athletes’ participation in ultraendurance sports events, such as ultramarathons, long-distance triathlons, cycling, swimming, adventure races, and other events lasting >6 h has increased in recent years [1,2]. Despite the intensive and vigorous training demanded by these sports, a large number of contestants do not complete the competitions. This failure might be explained by the intense fatigue, injury, dehydration, hyponatremia, or hypoglycemia that are faced by the athletes [3,4].

In the previous decade, adventure racing has increased in popularity all over the world, with a consequent increase in the number of events and participants [5]. The competitions may last several uninterrupted days, and mixed-gender teams of three to five members need to use specific abilities to complete trekking, mountain biking, vertical techniques (rappelling, climbing, and Tyrolean traverses), horse riding,