

Practical Solutions

# **Nutritional Support for University Student Athletes in a Decathlon: A Case Study of Athletes Participating in a Japan Athletics National University Championship**

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## ABSTRACT

### **【Aim】**

In a decathlon of track and field events, the athletes compete in multiple events repeatedly, every one or two hours, over two days, making it difficult for them to secure sufficient rest for food intake. Therefore, it is necessary to develop a practical method of nutritional supplementation for these athletes based on the sports nutrition theory. Based on this background, we accompanied the participants of a Japan Athletics National University Championship for two days, providing supplementary foods, beverages, and meals during the games and offering guidance.

### **【Methods】**

We calculated the target amounts of energy and of each nutrient, referring to the Dietary Intake Standards for Japanese 2015 and the American College of Sports Medicine (ACSM) guidelines, and prepared supplementary foods and meals based on the competition timetable. Hydration was adjusted according to the athletes' physical condition and the weather each day.

### **【Results】**

During the game, the actual energy and nutrient intake exceeded 90% of the pre-set target nutritional supplementation. The athletes reported that their concentration level had increased, and that their subjective fatigue had reduced. In addition, the quality of their post-game sleep had also improved. As a result, the athletes were able to win the championship with personal bests.

### **【Future Works】**

There are almost no previous studies on energy consumption during decathlon competitions. Consequently, the differences between the theoretical estimates and actual consumptions in the participants of decathlon events have not been verified. It is necessary to conduct measurement of energy consumption during match-style practice to derive the estimated values and consider the introduction of measuring devices at match venues that can be used to easily monitor the body weight and subjective fatigue.

**Keywords:** athletics, decathlon, match period, nutritional support