

Original Article

Effect of nutritional intervention on vitamin D inadequacy in Japanese Badminton national team players

Nagisa INOUE ^{*1}, Taro IIZUKA ^{*2}, Joo Bong PARK ^{*2}, Michiko DOHI ^{*1}

^{*1}Japan Institute of Sports Sciences

^{*2}Nippon Badminton Association

ABSTRACT

【Aim】

Vitamin D deficiency negatively influences bone health and may lead to bone loss and/or fracture. Vitamin D status is influenced by sun exposure in addition to vitamin D intake. Consequently, indoor sports athletes are susceptible to vitamin D deficiency. The serum 25 (OH) D level is used to assess the vitamin D status. The risk of fracture increases if the 25 (OH) D level is less than 30 ng/mL. It is therefore of concern that every player on the Japanese badminton national team had a 25 (OH) D level below 30 ng/mL. We performed a nutritional intervention for 39 players (19 men, 20 women) to improve their vitamin D status over a period of approximately 1 year.

【Methods】

We analyzed blood samples and assessed nutritional intake and body composition. For the nutritional intervention, we established a target nutritional intake for each player and suggested individualized strategies to optimize vitamin D intake from fatty fish.

【Results】

As a result of our intervention, the 25 (OH) D level increased ($P < 0.001$). Similarly, vitamin D and fish intake increased significantly in both the men and the women ($P < 0.05$).

【Conclusion】

It is likely that the increase in fish intake, a rich source of vitamin D, led to the observed improvement in the vitamin D status.

Keywords: Vitamin D status, Japanese badminton national team players, nutritional intervention