



FULFILLMENT OF THE DAILY PROTEIN INTAKE RECOMMENDATIONS IN COLLEGE ATHLETES COMPARED BY SEX

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ABSTRACT:

Purpose: To compare by sex the proportion of college athletes that consume protein below, inside and above the recommended amount.

Methods: We evaluated 341 athletes (192 males and 149 females) from different sports. Food intake was evaluated through a 24-hour reminder for a habitual training day. Afterwards, daily protein intake was estimated and then calculated for g/kg body weight. Then subjects were located into one of three categories according to their daily protein intake as below (<1.4 g/kg/day), inside (1.4 to 2.0 g/kg/day), and above (>2.0 g/kg/day) the recommended daily amount. The results were counted and expressed as percentage of subjects at each category. The 95% confidence interval (CI) was calculated for each percentage. This analysis was performed in both male and female athletes and compared by sex.

Results: The general characteristics of the evaluated subjects for age, weight, height and BMI were 21.2 ± 2.1 y, 74.7 ± 14.1 kg, 176.2 ± 6.9 cm, 24.0 ± 3.8 kg/m² for males, and 20.6 ± 1.9 y, 61.5 ± 11.2 kg, 163.4 ± 6.6 cm, 23.0 ± 3.7 kg/m² for females, respectively. It was observed that the amount of male athletes that consumed protein below and inside the recommended amount was the same (61 subjects each; 31.8%, CI 25.2 – 38.5), however most of them consumed above the recommended amount of protein (70 subjects; 36.4%, CI 29.5 – 42.3). Similarly, the majority of the female athletes above the recommended protein amount (55 subjects; 36.9%, CI 29.1 – 44.7), followed for those who ingested below (53 subjects; 35.6%, CI 27.8 – 43.4) and inside (41 subjects; 27.5%, CI 20.2 – 34.8) the recommended amount. There were no significant differences by sex ($p > 0.05$).

Conclusion: The proportion athletes consuming protein below, inside and above the recommended amount is similar regardless of sex. Most of the male and female athletes consumed more than 2.0 g/kg/day.

INTRODUCTION

It is recognized that physically active individuals have higher protein requirements than their sedentary counterparts (Phillips & van Loon, 2011). Consuming adequate amounts of protein may promote faster and better training adaptations. Some authors suggest a protein dosage by about 1.4 to 2.0 g/kg/day may be optimal to achieve these goals (Jäger, 2017). Subjects consuming protein below this recommendation, may be more prone to injuries, delayed recovery and muscle mass loss (Pasiakos, 2015). Conversely, there could be subjects consuming protein above this range, which may be useful for sparing muscle mass and for higher body fat loss during energy restricted diets, but unnecessary in other situations (Phillips, 2014). That's why we wanted to know the proportion of male and female college athletes that fulfill the aforementioned protein recommendation, and those consuming protein below and above it.

METHODS

We evaluated 341 college athletes (192 males and 149 females) from different sports. Food intake was evaluated through a 24-hour dietary recall for a habitual training day. Afterwards, daily protein intake was estimated and then calculated for g/kg body weight. Then, subjects were located into one of three categories according to their daily protein intake as below (<1.4 g/kg/day), inside (1.4 to 2.0 g/kg/day), or above (>2.0 g/kg/day) the recommended daily amount. The results were counted and expressed as percentage of subjects at each category. The 95% confidence interval (CI) was calculated for each percentage. This analysis was performed for both male and female athletes and compared by sex employing a Z-test for independent samples. We considered significant those differences with a p value <0.05.

RESULTS

The general characteristics of the evaluated subjects for age, weight, height and BMI were 21.2 ± 2.1 y, 74.7 ± 14.1 kg, 176.2 ± 6.9 cm, 24.0 ± 3.8 kg/m² for males, and 20.6 ± 1.9 y, 61.5 ± 11.2 kg, 163.4 ± 6.6 cm, 23.0 ± 3.7 kg/m² for females, respectively.

The proportion of male athletes that consumed protein below and inside the recommended amount was the same (61 subjects each; 31.8%, CI 25.2 – 38.5), however most of them consumed protein above the recommended amount (70 subjects; 36.4%, CI 29.5 – 42.3) (Figure 1). Similarly, the majority of the female athletes consumed protein above the recommended amount (55 subjects; 36.9%, CI 29.1 – 44.7), followed for those who ingested below (53 subjects; 35.6%, CI 27.8 – 43.4) and inside (41 subjects; 27.5%, CI 20.2 – 34.8) the recommendation (Figure 1). There were no significant differences by sex ($p > 0.05$).

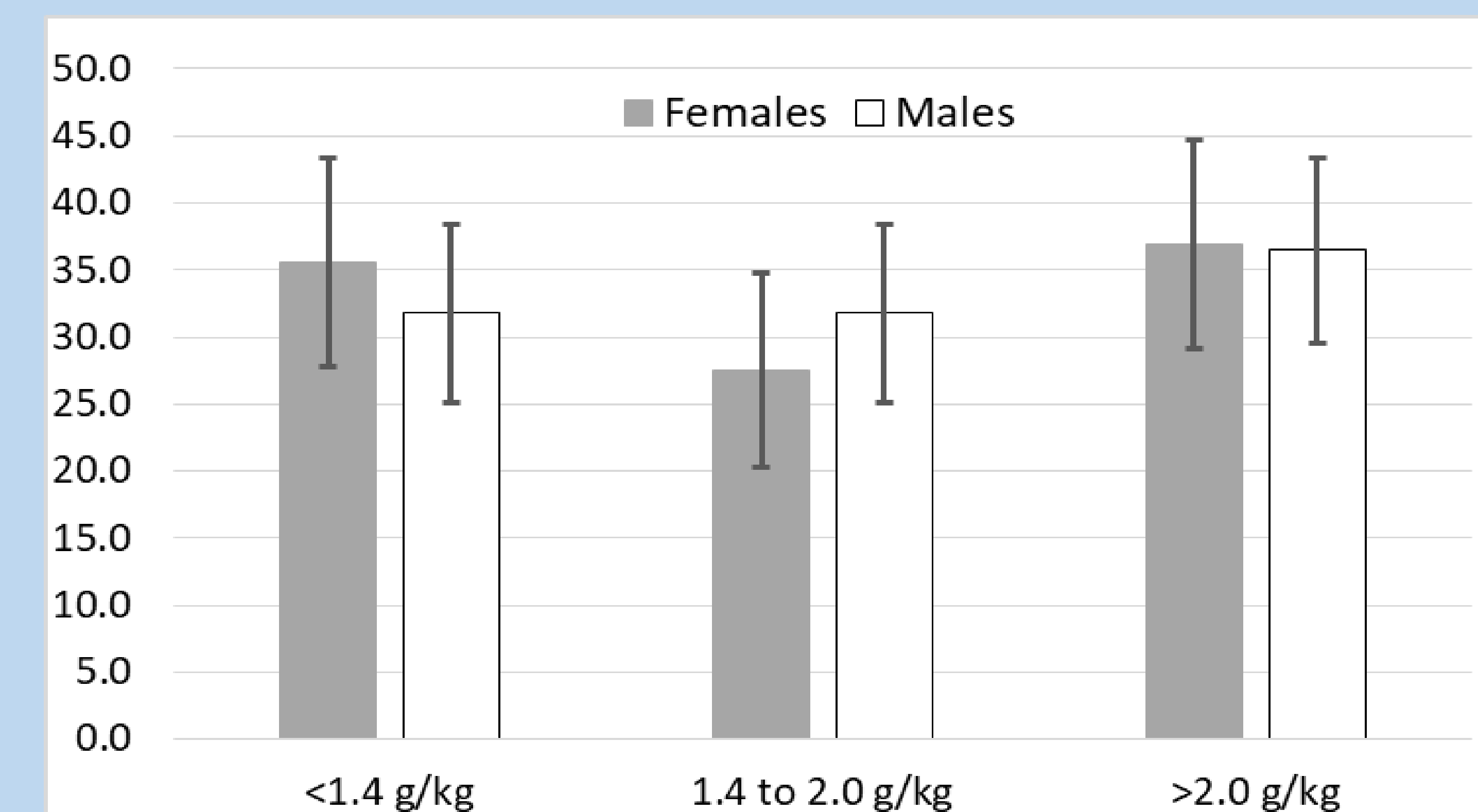


Figure 1. Proportion of college athletes consuming protein below, inside, or above the recommended amount of 1.4 to 2.0 g/kg/day. Bars represent the proportion of subjects by sex; whiskers represent 95% CI. No significant differences were observed by sex ($p > 0.05$).

CONCLUSIONS

The proportion of athletes consuming protein below, inside and above the recommended amount was similar regardless of sex. Most of the male and female athletes consumed more than 2.0 g/kg/day.

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