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Protein supplementation practices and the risk of low protein intake among athletes and active adults in Ireland

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Chronic low protein intake can negatively affect human growth, cardiovascular function, metabolic profiles, immunity and exacerbate deficiencies of other nutrients including iron⁽¹⁾. It's widely accepted that athletes and active individuals have an increased requirement for dietary protein, however to date little is known about the prevalence of low protein intake or protein supplementation practices within this population in Ireland.

This study aimed to examine the following in an Irish population of athletes and active adults: (i) the prevalence, frequency, and reasons for using protein supplements and protein-fortified foods; and (ii) the proportion of those at risk of consuming less than 1.0g of protein/kilogram bodyweight/day.

Participants, aged ≥ 18 years, residing in Ireland, and engaging in competitive sport or structured physical activities at least twice weekly, completed a self-administered, web-based questionnaire. A validated protein intake screening tool⁽²⁾ was included to estimate the risk of low protein intake based on self-reported food consumption over the previous 4-weeks. Data collection occurred in April 2024 and descriptives and Chi-squared tests were performed (IBM SPSS v29).

The questionnaire yielded 885 (median age = 40yrs, range = 18-77yrs; 57.6% female) completed responses. More than half (54.5%) of this population were athletes competing at either local (34.3%), regional (24.3%), national (25.8%) or international (15.4%) level, while the remaining 45.5% engaged in regular exercise only. Overall, 50.2% of this population used protein supplements, with a greater prevalence among men (55.5% vs 46.3%, $P < 0.01$) than women. There was no difference in the use of protein supplementation between athletes (55.5%) and active adults (53.7%, $P = 0.595$). The main reasons participants provided for using protein supplements were: 1) they found it difficult to meet daily protein requirements through diet alone (59.4%), 2) their training goals required higher intakes (47.7%), and 3) convenience (41.1%). Based on data from the protein intake screening tool, 36.5% of this population were at risk of low protein intakes from food alone, with no difference between athletes and active individuals ($P = 0.909$), but a higher risk among men (47.7% vs 28.2%, $P < 0.01$) than women. Those who were at risk of low protein intakes were no more likely to use protein supplements ($P = 0.972$) or protein-fortified foods ($P = 0.956$) than those not at risk. Of those at risk, 49.1% and 4.5% did not consume any protein supplements or protein-fortified foods respectively, while only 14.4% took protein supplements daily and 7.7% consumed proteinfortified foods daily.

Up to a third of this population may not consume adequate protein through their diet alone. While protein-fortified foods and supplements may be helpful, athletes and active adults should attempt to meet their daily protein requirements through a balanced whole food diet, where possible.

References

1. Wu G. (2016) *Food Funct* 7, 1251–1265.
2. Tuttiett E. R., Ioannou E., Wijnhoven H. A. H., et al. (2022) *J Nutr Sci* 11, e100.