

High protein diets for athletes and exercisers

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This presentation is dedicated to **Professor Kevin Tipton** who sadly passed away in January of this year, and is greatly missed by so many across the sport nutrition community. Aligned with the mission of ISENC, Kev was a staunch advocate of critical appraisal, particularly with regards to translation of high quality protein nutrition science into applied practice. In tribute to Kev, this presentation aims to critically evaluate the effectiveness, consequences, and potential dangers of high protein diets for health and performance.

Athletes and exercisers consume high protein diets for a number of reasons, including weight loss and recovery from intense exercise and/or injuries. Yet, probably the most prevalent reason for a high protein intake is to promote muscle hypertrophy and strength gains with resistance training. Muscle mass and strength can be gained on a

wide range of protein intakes, from as little as the RDA (0.8 g protein/kg body mass per day) up to very large amounts. There is limited scientific support for the necessity of very high protein intakes, e.g. >2 g/kgBM/day to optimise muscle hypertrophy during energy balance or excess. On the other hand, during energy restriction, increased protein intake, i.e. the maintenance of protein intake in the face of decreased energy leading to a relative increase, seems to increase the loss of body mass in obese individuals, and protects muscle mass in both athletic and obese populations. Preliminary evidence also exists that high protein intake may increase tolerance of intense training. However, the practicality of such high protein intakes remains to be established. Thus, there may be some situations in which a high protein diet is efficacious.

In practice, athletes and exercisers should consider their own training and competitive goals prior to making any decisions regarding best practice protein nutrition. A cost-benefit type analysis is clearly warranted. This presentation is not meant to advocate high protein diets. In most cases, there seems to be limited — if any — rationale for recommending protein intakes above the habitual norm of 1.5–2.0 g/kgBM/day. However, there may be situations in which some athletes may benefit from higher protein intakes given careful consideration of each individual training situation, competitive goals and safety of the nutritional regime.

Key readings

Tipton KD (2011). Efficacy and consequences of very-high protein diets for athletes and exercisers. *Proceedings of the Nutrition Society* **70**: 205-214.

Tipton KD & Wolfe RR (2004). Protein and amino acids for athletes. *J Sports Sci* **Jan 22(1)**: 65-79.

Tipton KD & Witard OC (2007). Protein requirements and recommendations for athletes: relevance of ivory tower arguments for practical recommendations. *Clin Sports Med* **Jan 26(1)**: 17-36.