



Dairy Council for Northern Ireland Nutrition Lecture 2011

'New Directions in Sports Nutrition'

Professor Ron Maughan
Loughborough University, UK

Diet significantly influences athletic performance. Sports nutrition embraces the needs of the elite athlete as well as those of the person who pursues an active lifestyle in search of health benefits.

New developments in sports nutrition include recognition of the need for individualisation of dietary advice and recognition of the need for use of biomarkers for assessment of nutrient status. The importance of carbohydrate in the athlete's diet for both training and competition is well established and remains a cornerstone of good nutrition practice. Increasing fat availability in the days prior to exercise promotes fat utilisation and spares CHO utilisation during subsequent exercise, but does not enhance exercise performance. A period of fat adaptation lasting from a few days to a few weeks does not provide any additional benefit. Protein needs may be increased by regular training, but high (2-3 g/kg/d) protein intakes are not necessary, though they are generally not harmful. Ingestion of small amounts of essential amino acids (possibly as whole proteins, especially whey) before, during or immediately after exercise may promote net protein synthesis and enhance adaptations to training. Further information is required on the effects of the composition of ingested amino acids, the type of protein, the presence of other nutrients ingested concurrently, and of the timing of ingestion in relation to exercise. We also need to know if these changes in protein turnover translate into functional outcomes in elite athletes.

During fatiguing exercise lasting longer than about 1 hour, ingestion of 20-90 grams per hour of carbohydrate that is rapidly converted to blood glucose generally improves performance. Sodium losses in sweat are highly variable, and sodium should be included in fluids consumed during exercise lasting longer than 1-2 hours or when sweat sodium loss is more than about 3-4 grams. Many athletes do not drink enough, but some drink too much in training and in competition. Dietary supplements are widely used, but few products are supported by good evidence of efficacy. Many products on the market may be contaminated with steroids or other prohibited substances that could lead to a positive doping result. Athletes cannot assume that any product is safe and are cautioned against the indiscriminate use of dietary supplements.

Athletes should be aware of the eating strategies that allow them to meet their nutrition goals, but should also be able to make food an enjoyable part of their lifestyle.