

Can Nutritional Supplements Facilitate Recovery from Exercise



SINI sport scientist Declan Gamble has recently returned from the sport, Leisure and Ergonomics conference, which was held at Burton Manor College, situated on the outskirts of Liverpool, where he presented research which examined the potential of a nutritional supplement to facilitate recovery after strenuous exercise. The rationale for the study and the main findings of recent investigations are summarised below.

Most athletes engaged in vigorous training and competition, often experience micro injury to muscle tissue as a consequence of their participation. Muscle damage can be detrimental because it has been shown to impair the replenishment of the energy stores that are used during exercise, which in most cases is predominantly carbohydrate. This can be a major inhibitor of athletic performance in the athlete's next exercise bout. For example, athletes could theoretically be going out to compete midweek, with half or even less, of the energy stores they had available to them prior to competing the previous weekend. Consequently athletes become fatigued much earlier, and this has the potential to reduce performance. Thus, minimising the impairment of energy restoration, by reducing the extent of muscle damage and/or by accelerating the repair process, is of practical significance to athletes.

The importance of carbohydrate ingestion post-exercise, in relation to recovery, has been known for some time. However, the role of dietary protein in enhancing the recovery process has unfortunately not been identified. Moreover, amino acids (the building blocks of muscle fibres) have been shown to play a crucial role in repairing muscle damage. Importantly, three of these amino acids, leucine, isoleucine and valine, which are commonly referred to as the branched-chain amino acids (BCAA), have been shown to play a favourable role in the regulation of muscle protein metabolism during and post-exercise. This revelation has been interpreted to suggest that the BCAAs could enhance anabolic processes (i.e muscle building), including acceleration of recovery during training. A number of recent investigations have illustrated the potential of these amino acids to facilitate recovery. However, these preliminary results need to be supported by further evidence before any solid recommendations can be put forward. This work is ongoing and readers will continue to be informed of the latest developments through the SINI newsletter.