Evaluating quality of protein supplements for athletes

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Protein powders are among the most commonly consumed nutritional supplements by professional athletes and amateurs, and even by those who use them for aesthetic purposes instead of sporting ones. This study, led by a researcher from the Area of Human Motility and Sporting Performance at the University of Seville, has analysed the quality of

these products in function of their source, treatment and storage.

"During the preparation of powdered protein supplements, the thermal treatment involved can reduce the nutritional value of the product, an aspect that, until now, has received little research attention. lysine, an amino acid involved in this reaction, is transformed into other compounds that are not biologically usable. In addition, according to the thermal treatment received, changes can be produced in the protein structure, which means that these supplements are less digestible for the body. Therefore, it was important to investigate this matter," explains University of Seville teacher Antonio J. Sánchez.

The results indicate that half the supplements analysed contain more than 6 percent of blocked lysine, but only 9 percent had a content of more than 20 percent of blocked lysine. In addition, the supplements with the highest concentrations of blocked lysine were hydrolysed and peptide serums (12 percent), while the lowest concentrations were registered by serum and casein isolates. The study also proved that the content of carbohydrates as shown on the label could be an "indirect but useful" indication of the thermal damage done to milk serum supplements.

However, the experts indicate that, a priori, the consumption of protein supplements does not cause any health problems, provided that a product has complied with quality controls, is bought in a specialised and approved establishment and is made using the correct criteria. "There are increasingly more cases in which the consumption of supplements means, unknown to the consumer, the consumption of substances that can have adverse effects on their health. Therefore, nutritional evaluation must be the first step when advising athletes on diet strategies or the use of supplements," the researcher adds.

Nutritional evaluation must always be tailored to the individual and done by a professional who takes into account the person's detailed medical

and nutritional history, evaluation of their diet, anthropometry, and analysis of their body and biochemical composition, before prescribing any supplement.

Real benefit for health and for sporting performance

According to the experts, the consumption of high-quality protein supplements like an isolate of milk serum can produce benefits for health and athletic performance. There is scientific evidence backing the idea that these supplements can help to minimise the loss of muscle mass in elderly people or help those who practise sports in which strength is important to achieve an optimised level of muscle performance, for example.

This study was part of a multidisciplinary project that studied more than 5,000 subjects of different profiles,including international athletes, whole national teams, amateur athletes and gym users. "Knowing what use is made of these supplements can help us to understand the legal and educational needs in that regard, and improve the information we give to society."

More information: A.J. Sánchez-Oliver et al, Quality analysis of commercial protein powder supplements and relation to characteristics declared by manufacturer, *LWT* (2018). DOI: 10.1016/j.lwt.2018.06.047

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