

Ginseng can speed up recovery and reduce muscle fatigue after exercise, research finds

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Ginseng is one of the most popular food supplements in the world. It is

made out of various plants and herbs and is thought to provide many benefits, with numerous studies pointing at possible anti-inflammatory and antioxidant benefits as well as anti-cancer effects. A group of researchers at the Universitat Oberta de Catalunya (UOC) has now found that it can also be helpful for exercise.

According to the findings of the study, which was carried out as part of a master's degree final project and was [recently published](#) in the open-access journal *Nutrients*, taking [ginseng](#) has a direct effect on reducing fatigue and helps muscles to recover after sport.

"We've found that ginseng can play a significant role as a nutritional supplement when it comes to recovering after exercise," said Borja Muñoz, a fitness coach and one of the study's lead authors, who has conducted this research under the supervision of his tutor Patricia Martínez, a dietician and nutritionist and course instructor at the UOC's Faculty of Health Sciences, together with the experts Rafael Bailón and Laura Esquiús, a researcher at the UOC's Foodlab group.

To carry out the study, they systematically reviewed more than 700 articles from the [scientific literature](#) and meticulously analyzed their findings to confirm these benefits for healthy adults engaging in physical exercise.

"When taken together with a [balanced diet](#), ginseng can provide additional nutrition for athletes or anyone else who does physical exercise on a regular basis. It's also worth noting that, unless it's medically contraindicated in any given case, taking ginseng on a regular basis is considered beneficial (or at least not harmful) for healthy people," said Muñoz.

Evidence and benefits of ginseng

The review has concluded that taking ginseng can significantly reduce post-exercise muscle damage in healthy adults. Furthermore, it improves muscle regeneration and helps the body recover from both muscle fatigue and damage after physical exercise.

Specifically, the exertion and intensity involved in sport result in damage to muscles. This is mainly inflammatory damage. The active ingredients of the compounds contained in ginseng stimulate the central nervous system, have antioxidant and anti-inflammatory properties and regulate cortisol, the stress hormone, benefiting many of the body's metabolic functions and helping the immune system perform as it should.

Specifically, taking ginseng systematically for a long time can mitigate the response of the biological markers, mainly creatine kinase (CK) and interleukin 6 (IL-6), responsible for exercise-induced muscle damage and inflammation. Furthermore, it reduces and mitigates the appearance of lactate in the blood. Lactate is a chemical compound produced by the body when muscles have insufficient oxygen due to overexertion that hinders muscles' ability to contract, the main cause of muscle fatigue.

Potential to reduce the risk of injury

It should also be noted that, by reducing fatigue, taking ginseng on a regular basis may also help reduce the risk of injury, particularly in the case of muscles or ligaments, which can in turn improve athletic performance.

"Although recovery times vary based on the nature of the injury and between individuals, the damaged structures share the same physiological processes. That's why professionals in this field must obtain the most efficient physiological context, to ensure that each person can recover as well and as quickly as possible. This is where ginseng comes in, as it can play a significant role in recovering from

injuries," said Muñoz about the possible benefits to athletes, based on their own personal characteristics, of taking ginseng according to a schedule.

A common product in traditional Chinese medicine

The study arose from Muñoz's interest in confirming by means of scientific evidence the empirical experiences observed by him when doing work experience as a fitness coach and injury specialist in a football club in China. Muñoz observed that ginseng, a supplement very commonly used in traditional Chinese medicine, was widely used by football players, who reported beneficial effects from taking it.

"Our aim was to learn more about the effects of ginseng in a specific situation, in this case in connection with exercise, and to provide verifiable evidence of its ability to improve the body's response to the stimuli of chronic load in sport, helping athletes to recover between training sessions, as the footballers themselves reported that it worked just like an energy drink," said Muñoz. In fact, there are currently countless products for athletes on the market, such as tablets and specific drinks.

Establishing a scheduled consumption protocol for the future

According to these experts, this may pave the way for studying the benefits of ginseng in greater depth and assessing how using it as a supplement can improve performance in sport. In fact, one of its main possible effects is stimulating and speeding up the body's regeneration processes following muscle damage.

"Of the possible future research we're considering, a study to establish a

scheduled consumption protocol to find out exactly how and when athletes should take ginseng to optimize its benefits within a given timeframe is particularly appealing, as the studies carried out in relation to these cases suffer from a lack of diversity and scientific evidence," said Martínez.

The authors stressed in this regard that the methodology to be used in each type of situation must be clarified in order to learn more about how to improve supplementation with ginseng. "There's still a significant amount of work to do, as ginseng has potential to increase athletes' physical performance and help prevent certain injuries, particularly [muscle](#) injuries," concluded Muñoz.

More information: Borja Muñoz-Castellanos et al, Effect of Ginseng Intake on Muscle Damage Induced by Exercise in Healthy Adults, *Nutrients* (2023). [DOI: 10.3390/nu16010090](https://doi.org/10.3390/nu16010090)

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