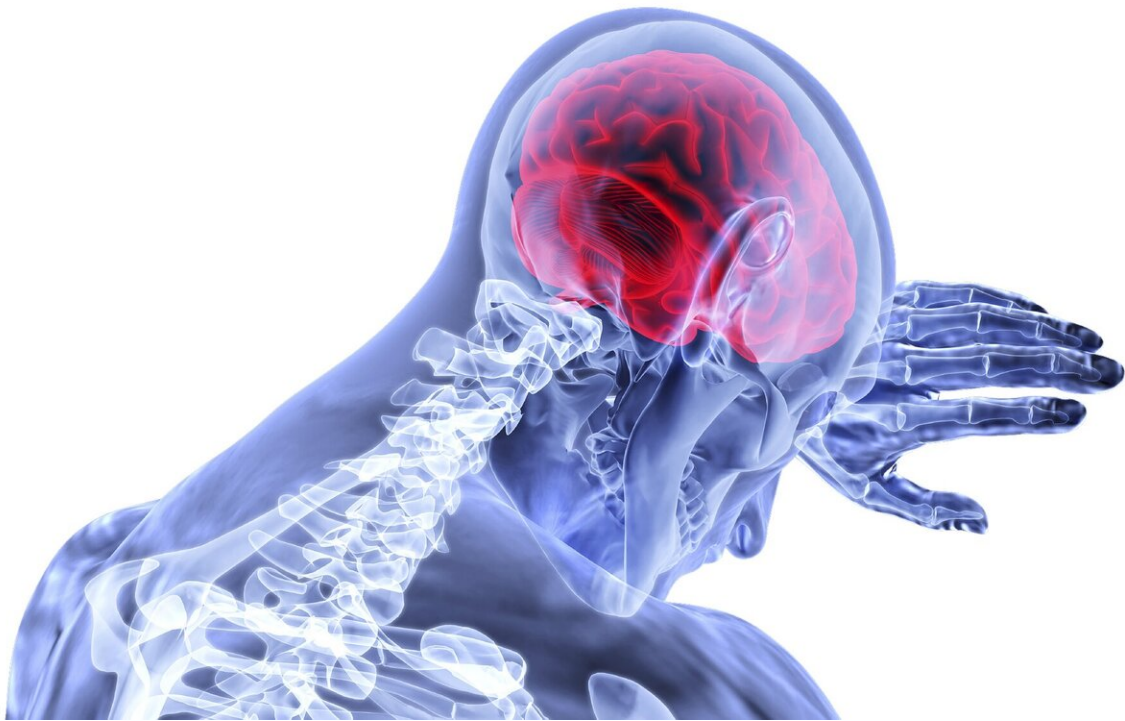


D-glyceric acid found to activate cellular mitochondria and reduce low-grade inflammation in aged

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A study conducted at the University of Jyväskylä analyzed the health effects of a patented DGA compound and compared them to the effects of exercise. The study was groundbreaking because clear health effects

of mitochondrial activation such as those now found have not been observed before. The study group consisted of randomly recruited healthy volunteers aged 50 to 60 years. Even in this age group, the health decline associated with aging begins to show. The study revealed that during the DGA treatment, the subjects' metabolism and blood parameters related to liver and muscle function improved significantly. In addition, low-grade inflammation was reduced. These changes occurred both rapidly within a few days and remained at an improved level throughout the three-week study period.

Prolonged chronic [inflammation](#) underlies many [common diseases](#), including almost all age-related metabolic and degenerative diseases. Reducing [chronic inflammation](#) can therefore have important public [health](#) implications.

The newly published [study](#) revealed that the DGA compound produces similar positive changes to those typically brought about by taking up exercise. Previous exercise studies have consistently shown that increasing [physical activity](#), especially in older or less mobile people, lowers the body's chronic inflammatory status after just a few weeks. Consistently, low-grade inflammation was effectively reduced following a three-week course of DGA. Often [older people](#) and those struggling with persistent systemic inflammation are unable to exercise enough, which can easily lead to a worsening spiral. Potentially, DGA activation of mitochondria can be of significant help in interrupting this spiral.

Another important finding from the study was that the DGA treatment had a strong positive effect within just a few days. This allows the use of an acute short course. It can significantly contribute to the body's own recovery from various acute health challenges such as respiratory or intestinal problems. The results show that the mitochondria in the blood [immune cells](#) were quickly activated, which may partly explain the surprisingly rapid decrease in inflammation levels. Low-grade

inflammation was measured by three different measures in the study. In addition, the new study found that the liver function of the subjects was significantly activated during the DGA treatment, again resembling the indirect liver activation induced by exercise. Liver function is crucial for health and recovery from disease. The liver processes and produces nutrients for the muscles and other organs while maintaining the important blood sugar balance.

The combination of the rapid and more lasting positive effects of DGA may be of significant help, particularly in the treatment of fatty liver and related serious diseases, where improvement of inflammation is an important part of recovery. There exists an unmet medical need for some of these conditions. In addition, in the current pandemic, it is important to find new compounds that reduce the risk of hospitalization for people with COVID-19. In particular, the mitochondrial mechanism of action that has now been identified brings a new approach to this important fight. The aim is to develop a nonprescription medicine from the natural and well-tolerated DGA molecule for both acute and longer-term use.

The research was published in *Frontiers in Aging*.

More information: O. Petteri Hirvonen et al, Randomized Trial: D-Glyceric Acid Activates Mitochondrial Metabolism in 50–60-Year-Old Healthy Humans, *Frontiers in Aging* (2021). [DOI: 10.3389/fragi.2021.752636](https://doi.org/10.3389/fragi.2021.752636)

Provided by University of Jyväskylä

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