

# New 'food group'? Ketone esters improve endurance exercise and cognitive function

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New research published online in *The FASEB Journal* shows that in rats, a substance called a ketone ester significantly increase exercise endurance, cognitive function and energy levels in the heart at high workloads. Ketone esters are small organic chemicals that provide energy for the heart, brain and skeletal muscle in a highly efficient way, but are typically produced by the body only during periods of food scarcity and are not naturally present in typical modern diets.

"The dramatic improvements in exercise performance and cognitive function will no doubt interest athletes and professional sports teams worldwide. Our hope, however, is that ketone ester supplementation will also hold benefits for people who are suffering from debilitating metabolic and neurological diseases by improving energy availability," said Andrew J. Murray, Ph.D., a researcher involved in the work from the Department of Physiology, Development and Neuroscience at the University of Cambridge, in Cambridge, England. "Further research into the potential benefits of ketone ester for human health is vital, and only just beginning."

To make this discovery, Murray and colleagues fed three different diets to [rats](#) for five days. A third of the calories in the diets were from a novel ketone ester, or fat, or carbohydrate. To test endurance, the rats ran on a treadmill. To test memory, the rats had to complete a maze. The researchers found that the ketone ester-fed rats ran farther and completed the maze faster and more accurately than rats on the carb or fat diets. Additional work described in the study shows that the ketone

ester diet also improved energy production in the heart itself.

**BEFORE CONSUMING ANY DIETARY SUPPLEMENT, PLEASE CONSULT YOUR HEALTH CARE PROVIDER.**

"These endogenous compounds have long been known in the metabolism field but here one is being used exogeneously," said Thoru Pederson, Ph.D., Editor-in-Chief of *The FASEB Journal*. "This may be a new horizon on the [energy](#) balance sheet in certain nutritional or physiological situations"

**More information:** A. J. Murray et al, Novel ketone diet enhances physical and cognitive performance, *The FASEB Journal* (2016). [DOI: 10.1096/fj.201600773R](https://doi.org/10.1096/fj.201600773R)

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