



**Ageing**

## Common energy drink ingredient taurine 'may slow ageing process'

**Scientists call for major clinical trial after lifespans of mice extended by boosting levels of micronutrient**

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Scientists have called for a major clinical trial of a substance added to many energy drinks after studies in animals showed that supplementation may slow the ageing process and promote healthier lives.

Researchers found that levels of the micronutrient taurine fell substantially with age, but that topping them up to more youthful levels boosted the health of mice and monkeys and even extended the lifespans of mice.

It is unclear whether humans might benefit in the same way - or whether the required high doses are even safe - but scientists believe the evidence is strong enough to warrant a large-scale trial, particularly given that taurine occurs naturally in the body and is already used as a supplement at lower doses.

“Taurine abundance declines with age and reversal of this decline makes animals live longer and healthier lives,” said Dr Vijay Yadav, who led the research at Columbia University in New York. “At the end of the day, these findings should be relevant to humans.”

Prof Henning Wackerhage, a molecular exercise physiologist on the team at the Technical University of Munich, said a trial would compare how humans fared after taking daily taurine or placebo supplements. “It will probably be very difficult to look at whether they live longer, but at least we can check if they live healthier for longer, and that of course is the goal for medicine.”

Yadav’s team homed in on taurine as a potential driver of the ageing process in 2012 when an analysis of blood compounds found that levels of the amino acid dropped dramatically with age in mice, monkeys and humans. By the age of 60, taurine levels in a typical person slumped to one-third of that seen in five-year-

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The scientists next looked at whether boosting taurine benefited animals that were much closer biologically to humans. A six-month trial in middle-aged macaques found that a daily taurine pill appeared to boost health by preventing weight gain, lowering blood glucose and improving bone density and the immune system.

Other evidence suggests taurine supplementation may have some effect in humans. Yadav and his team analysed medical data from 12,000 Europeans aged 60 and over. Those with higher taurine levels had less obesity, type 2 diabetes and high blood pressure, and lower levels of inflammation. Strenuous sessions on an exercise bike were found to boost taurine levels, the researchers [report in Science](#).

Without a major trial to demonstrate the safety or any benefits of taurine supplements, the scientists are not recommending people boost their intake through pills, [energy drinks](#) or dietary changes. Taurine is made naturally in the body and is found in meat and shellfish diets, but the healthiest diets are largely plant-based. Some energy drinks contain taurine, but the scientists warn they also contain other substances that may not be safe to consume at high levels.

“What we really need now is a human intervention study,” Wackerhage said, adding: “We are raring to go.”

In an [accompanying article](#), Joseph McGaunn and Joseph Baur at the University of Pennsylvania agree. Taurine supplementation in baby formula and energy drinks has thrown up few safety concerns, but they add that potential risks should still be considered given the lack of long-term human trials. “Like any intervention, taurine supplementation with the aim of improving human health and longevity should be approached with caution.”

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