

BURNING QUESTIONS | HEALTH

## Why is there taurine in energy drinks?



(Image credit: Alamy)



By [Zaria Gorvett](#) 9th June 2023

Scientists have discovered that taurine has life-lengthening benefits in mammals. But why is this supplement added to energy drinks?

*Article continues below*

**T**here's an elderly Scottie dog with a walking stick. Naturally, he is considering the skateboard in front of him – and beyond it, a skate ramp. Will this adventure end in disaster? Fear not, for he is a cartoon in a Red Bull advert – and this venerable hound has a can of the brand's signature energy drink.

After downing it like a student at a party, he performs a slick double-loop and casually catches his board in one hand (or paw, rather). "Who says you can't teach an old dog new tricks?," he says.

As it happens, the Red Bull advert from earlier this year is oddly prescient. This week, scientists revealed that the amino acid taurine, which is often added to energy drinks,

appears to have impressive **life-extending and health-boosting properties** in some mammals. Although the findings have yet to be replicated in humans, it is hoped that they **might be soon**.

But why is this supplement added to energy drinks in the first place? And could drinking more of them be beneficial?

### A forgotten hero

Taurine is an amino acid commonly found in meat, fish and eggs – it is rare in plants, but it has been found in smaller amounts in **algae, bacteria and fungi**. It's also sometimes sold as a supplement, which is **popular with bodybuilders and athletes**, who believe it may help them to control their body temperature and reduce muscular fatigue during exercise.

While taurine is not actually used to build proteins in the body, as other amino acids are, it has a range of roles, particularly in the **central nervous system** – where it regulates the amount of calcium in nerve cells and controls inflammation, among other things. In fact, taurine makes up around 0.1% of the body weight of animals. It was first isolated in the 1820s, from the bile of European cattle (*Bos taurus*), from which it **derives its name**.

For the most **recent study**, an international team of researchers tested the effects of a daily dose on middle-aged mice and rhesus macaques – they were 14 months old and 15 years old, respectively, at the time of the trial. The amount of taurine in the blood of mice, monkeys and humans naturally decline with age, so the team was curious whether an extra dose of the amino acid might be beneficial.

The results were striking. The animals that received taurine appeared significantly healthier and more youthful – their muscles, brains, and immune systems and other organs were functioning better – than those that did not get the amino acid supplement. Crucially, the lifespan of mice treated with taurine increased by 10 to 12%, with the monkeys experiencing a similar boost. If taking extra taurine in later life has the same benefits in humans, it could be equivalent to almost an extra decade.

"I thought this is almost too good to be true," Henning Wackerhage, a senior lecturer in molecular exercise physiology at the University of Aberdeen and one of 50 co-authors of the study, **told the BBC**.



*For middle-aged monkeys, taking a daily taurine supplement leads to a longer, more youthful life (Credit: Alamy)*

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### A long shot

The first energy drink was launched in the US in 1949. Branded "Dr Enuf", it was invented as a healthier alternative to soft drinks, and came in a lemon-lime flavour with added B

vitamins and caffeine. But it wasn't until 35 years later, when an Austrian marketing executive **stumbled upon a Thai brand** – Krating Daeng – during a business trip, that taurine entered the scene.

In addition to the typical ingredients, this non-carbonated drink contained inositol, a kind of sugar found in the brain, and taurine. It was sold as a hangover cure. Together the two men tweaked the original formula and added bubbles to create Red Bull. The modern energy drink had been born.

The original logic for adding taurine isn't clear, and today many companies don't have a clear justification either, beyond loosely pointing to its role in the heart, brain and muscles. However, there has been some research on its possible effects. For example, one study found that the combination of ingredients in Red Bull, including taurine, improved people's **aerobic and mental performance**.

Could energy drinks help people to live longer?

In the recent taurine study, the greatest health and longevity benefits were seen in animals given **1,000mg (0.03oz) of taurine** per kg of body weight per day. Assuming the average adult human weighs 63kg (139 pounds), they would need 63,000mg (2.2oz) per day – equivalent to the amount found in **63 cans of Red Bull**, or the same number of **cans of Monster** (other brands are available).

This is not something to be recommended. For one thing, it hasn't yet been established whether taurine supplementation would have the same benefits in humans, and it may have some risks. The lead author of the taurine study **wouldn't reveal to the BBC** if he is taking taurine, in case he influences others.

That's not to mention the potentially life-threatening effects of consuming the other things contained in almost 16 litres (28 pints) of Red Bull or 8 litres (14 pints) of Monster (the cans are twice the size) in a single day. This might include **hyponatremia** – a serious condition that results from drinking too much water, which results in too little salt in the blood. It could also lead to excess of caffeine. According to the Food and Drug Administration (FDA), rapidly consuming **more than 1,200mg of caffeine** can lead to toxic effects such as seizures. Drinking 63 cans of a typical energy drink would provide almost 2,000mg.

So, it's probably not a good idea to stockpile energy drinks. While the taurine they contain might just give you a microscopic boost, we'll need to wait for more research to find out if this is really the case. Just don't bet your skateboarding dog on it.

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