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Taurine may extend life and health, scientists find

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By James Gallagher

Health and science correspondent

Taurine - a nutrient found in meat, fish and sold as a supplement - extends life and boosts health in a range of animal species, scientists say.

Levels of taurine decline with age in different species, including people.

Experiments on middle-aged animals showed boosting taurine to youthful levels extended life by over 10% and improved physical and brain health.

The researchers say taurine may be an "elixir of life" - but topping up levels in people has not been tested.

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So the team, at Columbia University, in New York, recommend against people buying taurine pills or energy drinks packed with taurine in an attempt to live longer.

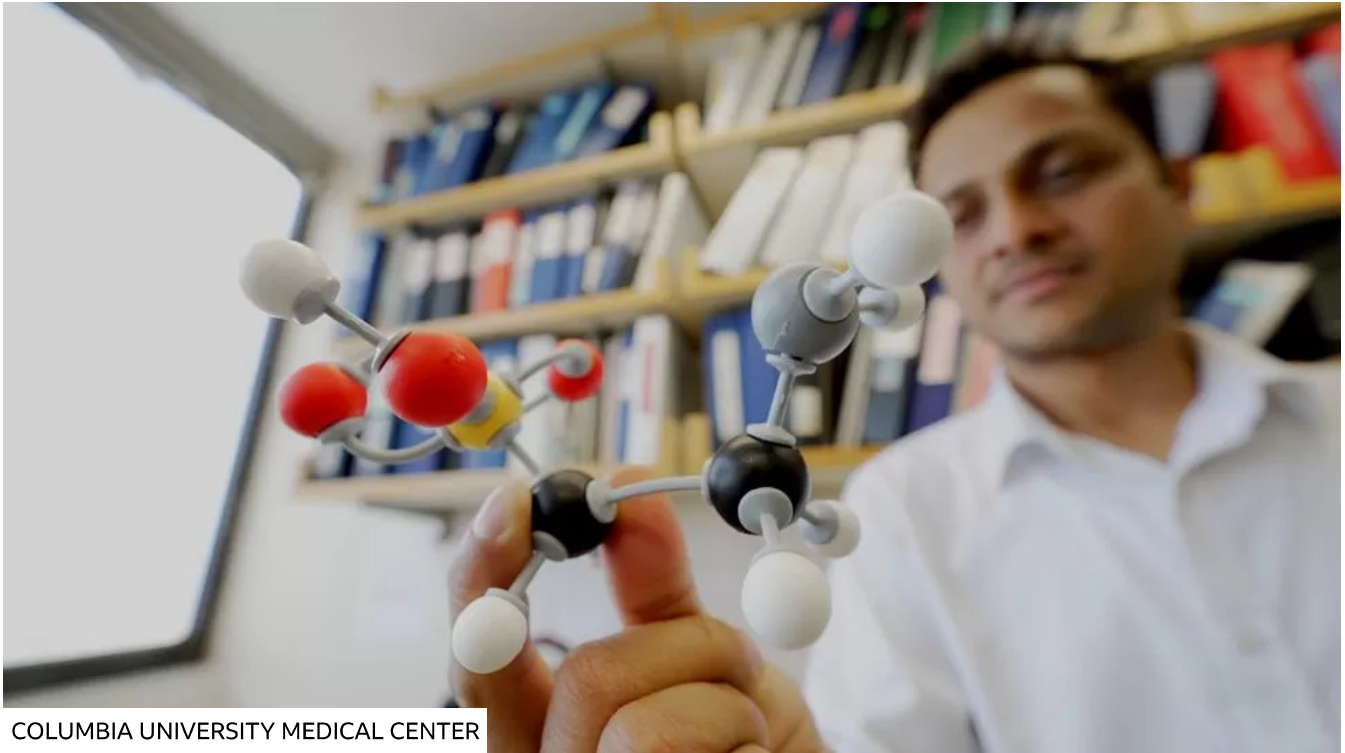
The animal research is, however, the latest development in the hunt for ways of slowing ageing.

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COLUMBIA UNIVERSITY MEDICAL CENTER

Dr Vijay Yadav holding a model of the chemical structure of taurine

This study started by analysing molecules in the blood of different species - to explore the differences between young and old.

"One of the most dramatically downgraded [molecules] was taurine," researcher Dr Vijay Yadav said. In elderly people, levels were 80% lower than in the young.

Taurine is virtually non-existent in plants. So the nutrient either comes from animal protein in diet or is manufactured by the body.

And for the past 11 years, the research team have been trying to flesh out its role in ageing.

'Improved memory'

A daily dose was given to 14-month-old mice, which is equivalent to about age 45 for humans.

The results, **published in the journal Science**, showed male mice lived 10% longer, females 12%, and both appeared to be in better health.

"Whatever we checked, taurine-supplemented mice were healthier and appeared younger," Dr Yadav said.

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Then, 15-year-old rhesus monkeys were given a six-month course of taurine - too short to notice a difference in life expectancy but, again, the researchers found improvements in body weight, bone, blood-sugar levels and the immune system.

"I thought this is almost too good to be true," said Prof Henning Wackerhage, who was involved in the research at the Technical University of Munich. "Taurine somehow hits the engine room of ageing."

But many of the big questions remain unanswered:

- Would the same results be possible in people?
- Why do taurine levels fall in the first place, if it is so good for health?
- How does it slow ageing?
- Are there any dangers in taking taurine?

The researchers performed an analysis of 12,000 people and showed those with more taurine in their blood were generally in better health.

If the data from mice applied to people, it would be the equivalent of an extra seven to eight years of life, they say.

But it will take proper clinical trials - where some people are given the nutrient and others a placebo pill - to see if any benefit can be detected.

Differences in human biology may stop taurine from working or there may be some evolutionary reason why levels are meant to fall with age. Current evidence - including energy drinks being on the market for decades - suggests taurine is safe.

Healthy diet

While taurine is in our diet, it would be hard to eat the quantities used in the experiments. The equivalent dose from the animal experiments, scaled up to people would be 3-6g (0.2oz) per day.

Dr Yadav refused to say whether he chose to take taurine supplements himself, for fear of unduly influencing people.

He told BBC News: "Let us wait for the clinical trials to be completed before recommending to the wider population that they go to the shelf in a grocery store and buy taurine."

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he said.

Power stations

The scientific report suggests taurine plays a role in reducing cellular senescence - where cells in the body stop dividing - a hallmark of ageing.

The nutrient also appeared to keep mitochondria - the power stations in the body's cells - functioning.

But how it does any of this remains unexplored.

Commenting on the findings, Joseph McGaunn and Joseph Baur, both from the University of Pennsylvania, said: "A singular focus on increasing dietary taurine risks driving poor nutritional choices, because plant-rich diets are associated with human health and longevity.

"Thus like any intervention, taurine supplementation with the aim of improving human health and longevity should be approached with caution."

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