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Scientists Discover That a Certain Nutrient Promotes Anti-Aging

TOPICS: Agência FAPESP Amino Acid Anti-Aging
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By FUNDAÇÃO DE AMPARO À PESQUISA DO ESTADO DE SÃO PAULO
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According to a clinical trial involving 55 to 70-year-old women, adding this nutrient to the diet can strengthen the body's antioxidant defenses and possibly lower the chance of developing diabetes, high blood pressure, and cardiovascular disease. However, more research is needed to confirm its effect.

According to the study, the amino acid taurine could be employed in anti-aging therapies.

Our cells produce potentially toxic by-products known as “free radicals” when they break down the oxygen we breathe and the food we consume each day in order to exist. Some of these molecules carry out important biological functions, but if there are too many of them, the internal cell structures can be harmed, impairing the cells' ability to function and possibly resulting in chronic disease. We refer to this process as oxidative stress.

Our bodies have a remarkable arsenal of antioxidant enzymes that help in maintaining a healthy balance of reactive oxygen species, but as we age, these control mechanisms decline. A recent study published in the journal *Nutrition* suggests that supplementing one's diet with the amino acid taurine could be a realistic approach to address the issue.

The study reported in the study was carried out at the University of São Paulo (USP) in Brazil. It involved 24 female volunteers aged 55 to 70. They were

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randomly separated into two groups. One group consumed three 500 mg capsules of taurine per day for 16 weeks (1.5 g per day). The other group received pills that simply contained corn starch (placebo). Neither the volunteers nor the researchers were aware of which group each participant belonged to.

Oxidative stress markers were analyzed in blood samples taken before and after the intervention. One of the most intriguing findings was an almost 20% rise in levels of the antioxidant enzyme superoxide dismutase (SOD) in the taurine group, compared to a 3.5% drop in the control group. SOD, the scientists explain, protects cells from the harmful reactions of the superoxide radical.

“Preventing the buildup of free radicals that naturally occurs with aging probably prevents cardiovascular disease, diabetes, and high blood pressure, among other chronic conditions,” said Ellen de Freitas. Freitas is a professor at the Ribeirão Preto School of Physical Education and Sports (EEFERP-USP) and co-principal investigator for a project supported by [FAPESP](#).

According to Freitas, very few studies of the effects of taurine in the context of aging can be found in the scientific literature. “This study was a first step, aimed at investigating the ideal dose and possible side effects, none of which was observed in any of the participants,” she said.

Anti-aging therapy

Taurine is a nutrient found in certain foods, such as fish, shellfish, chicken, turkey, and beef. Additionally, it is naturally produced in some tissues of the human body, particularly the liver, and is important to the functioning of the central nervous system, immunity, eyesight, and fertility.

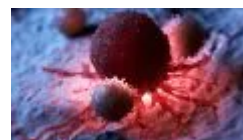
The Freitas group has been studying taurine’s antioxidant and anti-inflammatory properties for at least 10 years, initially in high-performance athletes and later in obese

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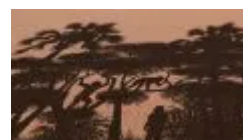
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people, with daily dosages ranging from 3 g to 6 g. “The results showed that oxidative stress in these individuals could be controlled when their diet was supplemented with this amino acid. We then decided to test the strategy in the context of aging. This was very novel, so we began with a very low safety dose,” Freitas said.

The initial plan was to look at the effects of taurine supplementation in conjunction with exercise training, as well as both treatments separately. Physical activity is thought to be one of the main ways to regulate levels of oxidizing substances and antioxidants in the body, and the proper amount is thought to enhance the benefits of taurine. However, because of the pandemic and the fact that the volunteers were in a high-risk group for COVID-19 complications, the researchers chose to solely proceed with the nutritional component of the study, which could be monitored remotely.

Two other markers of oxidative stress were analyzed besides SOD: the antioxidant enzyme glutathione reductase (GR), which decreased significantly in both groups, and malondialdehyde (MDA), which increased 23% in the control group and decreased 4% in the taurine supplementation group.

“These results were modest, but we believe a higher dose of taurine could produce stronger evidence for its benefits,” Freitas said.

For Gabriela Abud, the first author of the article and currently a Ph.D. candidate at the Ribeirão Preto Medical School (FMRP-USP), changes in the volunteers’ diet in the early months of the pandemic owing to lockdown may have affected the results of the biochemical analysis.

“In addition to markers of oxidative stress, we analyzed levels of minerals such as selenium, zinc, magnesium, and calcium, which are important to the functioning of these enzymes,” Abud explained. “Selenium, for example, is a co-factor for glutathione peroxidase [which indirectly

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helps eliminate hydrogen peroxide from the organism] and was reduced in both groups.”

For Freitas, taurine supplementation is only the “cherry on the cake” and cannot work miracles on its own. “A healthy lifestyle with a balanced diet and regular exercise is fundamental for the anti-aging effect to occur,” she said.

In the next study, the group plan to include obese women aged 60-75 with sarcopenia, a gradual loss of muscle mass that can be exacerbated by chronic inflammation. “These people face an acute risk of developing complications. We’ll offer physical training associated with taurine supplementation at 3 g per day and observe the possible alterations due to these interventions,” Freitas said.

It is important to bear in mind that the benefits and risks of dietary taurine supplementation are still being investigated. Food supplements should not be taken without medical supervision.

Reference: “Taurine as a possible antiaging therapy: A controlled clinical trial on taurine antioxidant activity in women ages 55 to 70” by Gabriela Ferreira Abud M.Sc., Flavia Giolo De Carvalho Ph.D., Gabriela Batitucci Ph.D., Sofia Germano Travieso B.Sc., Carlos Roberto Bueno Junior Ph.D., Fernando Barbosa Junior Ph.D., Julio Sergio Marchini Ph.D. and Ellen Cristinide Freitas Ph.D., 11 June 2022, *Nutrition*.

DOI: [10.1016/j.nut.2022.111706](https://doi.org/10.1016/j.nut.2022.111706)

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SciTechDaily.com, SciTechDaily, 2022

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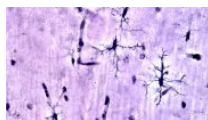
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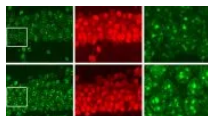
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9 COMMENTS

ON "SCIENTISTS DISCOVER THAT A CERTAIN NUTRIENT PROMOTES ANTI-AGING"

Sam Adams | September 4, 2022 at 6:38 am |
Reply

This article provides no evidence that taking Taurine provides any antiaging benefit. Anti-oxidants in general haven't been proven to increase lifespan though a few are likely to such as glutathione and sulforaphane.

RANDY K | September 4, 2022 at 6:55 am |
Reply

And why should your word be taken at all?
Anybody who wants to improve would research it for themselves. Taurine does give many benefits.

Giving an opinion to force an outcome when you don't have the relevant expertise, contradicting an article which alludes to knowing about the topic, means you are an IDIOT.

Dan K | September 4, 2022 at 9:40 am | Reply

From reading the article, the investigators are presenting findings that may be surrogate markers associated with aging, but there is no evidence in the article to support the sensational headline. The investigators, rightly so, draw no conclusions about "anti-aging" properties of taurine.

Dar | September 4, 2022 at 6:13 pm | Reply

Why is it legal for anyone to claim anti aging anything. This goes against clearly observable "baby to old age we see every moment of every day".

Maria | September 5, 2022 at 12:11 am | Reply

What foods have taurine in them?

Luc | September 5, 2022 at 1:33 am | Reply

@Dar legal because we still live in a society that allows scientific endeavour. Yes, we

see aging and it never ends well. But we also know that lifestyle has epigenetic effects on the rate of aging. We know people who are more senescent for their age than others. We also know that some animals live very long lives and even within our own bodies, some cell types hardly show any age degradation. We also know that our ability to purge senescent cells efficiently improves general well-being; and not doing so, appears like dying 'of old age' related disease.

Naeem Sharif | September 5, 2022 at 2:22 am
| Reply

Can the Scientists check the reason for long life of the natives of Hunza – Gilgit in Pakistan.

Gavin | September 5, 2022 at 6:27 pm | Reply

This article brought to by Redbull

Scientifique-Curieux | September 7, 2022 at 8:19 pm | Reply

Thank you for this article.

Yes, indeed it is one of other preliminary steps and studies on proving the efficacy of that amino acid.

<> =====>>>> That is so refreshing and open-minded. That has almost completely disappeared on the internet several years ago.

Cordially

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