

Taurine Supplements to Reverse Oxidative Damages and Restore the Muscle Function

A recent article published in *Frontiers in Physiology* stated that exercise-induced oxidative stress is linked with the expression level of endogenous antioxidants. However, these antioxidants cannot overcome all oxidative stress-related damages in the cells caused by physiological stress.

The authors informed that taurine, a sulfur-containing amino acid, is used for various physiological functions, but, its synthesis and accumulation under the oxidative environment may be compromised.

Recent evidence suggests that taurine level is increased during exercise performance with a decrease



in oxidative damage in overused muscles. While short-term supplementation with taurine increases physiological performance during severe work intensities, suggesting the role of taurine in improving muscle performance during exercise. On the other hand, the precur-

sor of taurine – cysteine, is used in the synthesis of other compounds like GSH and Coenzyme A, which are important for regulating the redox system and energy homeostasis.

The article's summary stated that it is important to understand whether taurine synthesis within the cells can suppress the activity of other compounds that are beneficial in preventing

oxidative damage during intense exercise. Furthermore, it is important to understand whether taurine supplementation can prevent the conditions observed in the physiological stress of muscles.

Potential Benefits of Echinacea

Echinacea is a genus of flowering plants in the daisy family and a common ingredient in cold remedies. Promoters of Echinacea believe that the supplement boosts the immune system and can reduce symptoms of infections and other illnesses, including the common cold.

Echinacea plants contain a complex mix of active substances. Some of these compounds may have an-



timicrobial and antiviral properties, while others may support the immune system in other ways.

Like many other plants, all types of Echinacea contain phenols. Phenols control the activity of a range of enzymes and cell receptors. They protect the plants from infections and ultraviolet radiation damage, and they may have beneficial antioxidant properties.

Some studies have shown that taking Echinacea might help fight off a cold. For example, in one review published in *The Lancet*, of over a dozen studies, scientists concluded that taking Echinacea could reduce the risk of catching a cold by around 58% and shorten the duration of a cold by 1.4 days.

People around the world use products that contain Echinacea to support the treatment of a range of illnesses, including, coughs and colds, bronchitis, upper respiratory infections, gingivitis, influenza, canker sores, yeast infections, ear infections, vaginitis, some inflammatory conditions, HIV, AIDS, etc. Also, some people use Echinacea to help wounds heal according to *PubMed*.

Prebiotics May Ease Anxiety in Young Adults

In a paper published in the journal *Scientific Reports*, researchers from Surrey, Canada, investigated whether the daily consumption of a prebiotic food supplement could improve overall wellbeing in a group of 18- to 25-year-olds. The study found that those who received a daily dose of prebiotics improved mental wellbeing by reducing anxiety levels and had better gut health than the control group.

Researchers studied a group of 64 healthy female participants with no current or previous clinical diagnoses of anxiety. Participants received either a daily dose of the prebiotic galacto-oligosaccharides (GOS) or a placebo for 28 days.

All those involved in the trial completed surveys about their health experiences, including mood, anxiety and sleep quality and provided a stool sample for gut microbiome sequencing analysis.

Dr Kathrin Cohen Kadosh, Reader in Developmental Cognitive Neuroscience at the University of Surrey and Head of the Social Brain and Development Lab, said "This new research marks a significant step forward in that we were able to show that we can use a simple and safe food supplement such as prebiotics to improve both the



abundance of beneficial gut bacteria in the gut and to improve mental health and wellbeing in young women."

Dr Nicola Johnstone, Research Fellow from the University of Surrey, said, "This is an exciting study that brings together different dimensions in mental health research; finding prebiotic effects in a sub-clinical group shows promise for translational clinical research on multiple markers of mental health."

Multivitamins, Omega-3, Probiotics, Vitamin D May Lessen the Risk of a Positive COVID-19 Test

Taking multivitamins, omega-3, probiotics or vitamin D supplements may lessen the risk of testing positive for SARS-CoV-2, the virus responsible for COVID-19 infection, at least among women, indicates a large population study, published online in the journal *BMJ Nutrition Prevention & Health*.

But taking any vitamin C, zinc, or garlic supplements wasn't associated with a lower risk of testing positive for the virus, the findings show.

Dietary supplements can help to support a healthy immune system, but whether specific supplements might be associated with a lower risk of catching SARS-CoV-2 isn't known.

In a bid to plug this knowledge gap, the researchers drew on adult users of the COVID-19 Symptom Study app to see if regular supplement users were less likely to test positive for SARS-CoV-2.

The app was launched in the UK, the US, and Sweden in March 2020 to capture self-reported information on the evolution of the pandemic.

Taking probiotics, omega-3 fatty acids, multivitamins or vitamin D was associated with a lower risk of SARS-CoV-2 infection: by 14%, 12%, 13% and 9%,



respectively, after accounting for potentially influential factors, including underlying conditions and usual diet.

No such effects were observed among those taking vitamin C, zinc, or garlic supplements.

And when the researchers looked specifically at sex, age and weight (BMI), the protective associations for probiotics, omega-3 fatty acids, multivitamins and vitamin D were observed only in women of all ages and weights. No such clear associations were seen in men.

Effects of Saffron Supplementation on Sleep Quality

Herbal medicines are frequently used by adults with sleep difficulties. However, evidence of their efficacy is limited. Therefore, the goal of a recent study was to examine the sleep-enhancing effects of a standardized saffron extract (affron).

A study conducted by author Adrian Lopresti and his team published in the *Journal of Clinical Sleep Medicine* was a 28-day, parallel-group, double-blind, randomized controlled trial. Sixty-three healthy adults aged 18 to 70 with self-reported sleep problems were recruited and randomized to receive either saffron extract (affron, 14mg twice daily) or a placebo.

Outcome measures included the



Insomnia Severity Index (ISI) (primary outcome measure) collected at baseline, days 7, 14, 21, and 28; Restorative Sleep Questionnaire (RSQ) and Pittsburgh Sleep Diary (PSD) collected on days -1, 0, 3, 7,

14, 27, and 28.

Based on data collected from 55 participants, saffron was associated with greater improvements in ISI total score ($p=.017$), RSQ total score ($p=.029$), and PSD sleep quality ratings ($p=.014$) than the placebo. Saffron intake was well-tolerated with no reported adverse effects.

Saffron intake was associated with improvements in sleep quality in adults with self-reported sleep complaints. Further studies using larger samples sizes, treatment periods, objective outcome measures, and volunteers with varying demographic and psychographic characteristics are required to replicate and extend these findings.

High-Dose Omega-3 Supplementation Linked to Improved Response to Stressors

Previous research has indicated several possible anti-aging benefits which are linked to omega-3 fatty acids – it has been linked to increased telomere length (a sign of cellular longevity), lower inflammation markers, and blunted sympathetic and cardiovascular stress reactivity.

In a recent clinical trial, researchers from Ohio State University, US, examined several other benefits related



to healthy aging, namely, how omega-3s supplementation could benefit these aforementioned metrics even during and after a stressful event.

The randomized, controlled trial examined the impact of omega-3 supplementation on biomarkers related to cellular aging, following a test that simulated speech stressors, using the highest dose of omega-3s they've studied – 2.5 grams.

The researchers saw significant differences from omega-3s supplementation, in a dose-dependent relationship. Both supplementation groups were protected from post-stress declines in mean telomere length (-24%), and anti-inflammatory cytokine IL-10 levels (-26%). Before and after the test, the 2.5g/day supplementation group saw reductions of cortisol by 19% before the test, and 33% following the test, compared to the placebo group.

The authors of the study concluded that as a result of the observed lowering levels of inflammatory markers and cortisol during stress (with boosted repair mechanisms during recovery) "omega-3 may slow accelerated aging and reduce depression risk."