ACTUS NUTRITION

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Alpha-lactalbumin May Beneficially Impact Microbiota of Women with PCOS

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Alpha-lactalbumin may beneficially impact microbiota of women with PCOS

Polycystic ovary syndrome (PCOS) is a common endocrine disorder affecting women of reproductive age, with significant impacts on health and quality of life. Recent research has suggested a link between PCOS and imbalances in the vaginal and intestinal microbiota, characterized by a loss of beneficial bacteria and an increase in harmful microbes. This study investigated the potential of α-lactalbumin (α-LA), a milk-derived protein, to address these microbial imbalances.

In vitro experiments showed that α-LA promoted the growth of beneficial bacterial genera, such as Bifidobacterium and Lactobacillus, which are typically reduced in PCOS-related dysbiosis. α-LA also influenced the composition of the microbiota, encouraging a healthier balance. A 30-day in vivo pilot study confirmed these findings, demonstrating that oral α-LA supplementation in women with PCOS supported the growth of beneficial bacteria while limiting harmful ones.

These results suggest that α-LA could serve as a prebiotic-like intervention to restore microbial balance in the intestinal and vaginal microbiota of women with PCOS, offering a promising approach for managing this condition.
Alessandri et al. Microb Biotechnol. 2024 Oct;17(10):e14540.

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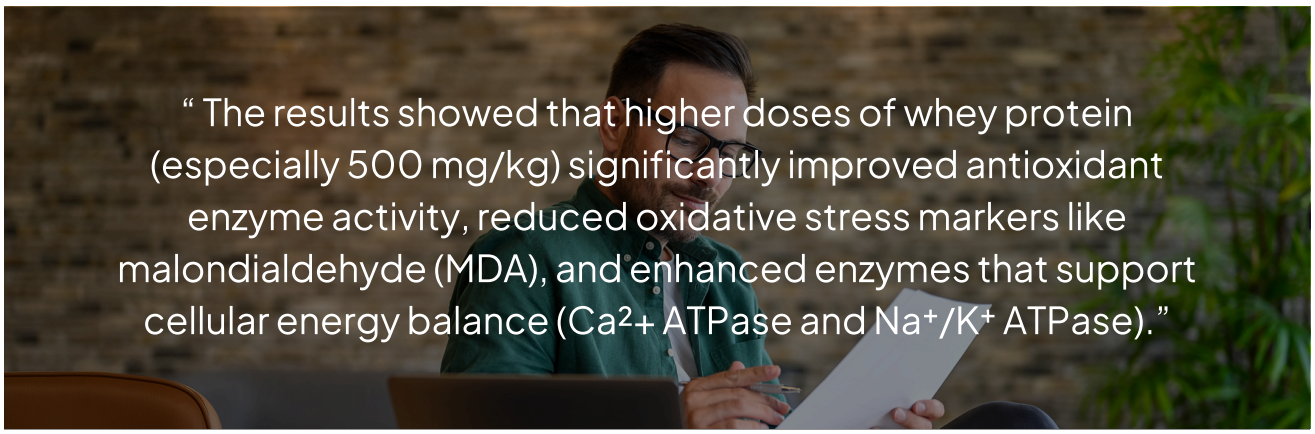
Can Whey Protein Help Reduce Oxidative Stress in Hypothyroidism?

Hypothyroidism, a common thyroid condition, increases oxidative stress by disrupting the body's antioxidant defenses. This study explored whether whey protein, a supplement rich in beneficial amino acids and peptides, could help reduce this stress in hypothyroidism.
Using a rat model, researchers induced hypothyroidism. Over two study phases (30 and 90 days), the effects of whey protein at different doses (100, 300, and 500 mg/kg body weight) were compared to a control group and a group treated with L-thyroxine, a common thyroid medication. Key measures included antioxidant enzyme activity, levels of oxidative stress markers, and histological changes in thyroid and liver tissues.



Histological analysis revealed that whey protein helped protect against damage to thyroid tissues caused by hypothyroidism. In the longer, 90-day phase, whey protein at 500 mg/kg continued to show benefits, reducing oxidative stress and improving thyroid function without any toxic effects.

The study concluded that whey protein supplementation, particularly at a 500 mg/kg dose, effectively supports antioxidant defenses and reduces oxidative damage in hypothyroidism. This suggests whey protein could be a safe and valuable addition to managing oxidative stress associated with thyroid dysfunction.
Sajan et al. Food Funct. 2024 Nov 11;15(22):11158-11168.

Whey Peptide Supplement May Help Reduce Anxiety and Stress

IMental health issues are among the most significant global health concerns. This study investigated whether β-lactolin, a peptide derived from whey, could improve mood and stress levels in humans. Previous research showed β-lactolin can activate dopamine systems and enhance psychiatric function in animals, but its effects on human mood had not been studied until now.

This randomized, double-blind, placebo-controlled trial included 60 healthy adults aged 45–64 with lower-than-average psychological health. Participants were randomly assigned to take either whey peptide containing 1.6 mg of β-lactolin per day or a placebo for six weeks.

Mood states were assessed through self-reported questionnaires, while secondary measures included quality of life (QOL), salivary stress markers, and lipid mediator levels.

Results showed that β-lactolin supplementation significantly improved trait anxiety (as measured by the State-Trait Anxiety Inventory) and subjective stress (assessed using the Perceived Stress Scale) compared to the placebo group. Improvements were also observed in vitality and mental health subscales of the 36-Item Short-Form Health Survey, indicating better QOL. Additionally, salivary immunoglobulin A levels, an indicator of immune response, were higher in the β-lactolin group. In participants aged 45–54, supplementation reduced both subjective stress and salivary prostaglandin levels, further supporting its potential benefits.

In conclusion, β-lactolin-rich whey peptide supplementation was found to reduce measures of anxiety, stress, and improve psychological well-being. These benefits may be linked to changes in immune function, as reflected in salivary biomarker analysis. This suggests β-lactolin could be a promising supplement for improving mood and mental health in healthy adults.
Ayabe et al. Sci Rep. 2024 Oct 8;14(1):23444.

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Does Protein Intake Influence Cardiovascular Risk?

A recent study explored the relationship between protein consumption and the risk of cardiovascular disease (CVD) in middle-aged adults, focusing not only on total protein intake but also on the variety of protein sources. The research aimed to determine if the type or diversity of protein consumed could impact heart health outcomes.

The study followed 5,879 adults in the U.S., aged 45 to 84, who were free of CVD at the start. Participants' protein intake was assessed using a detailed food frequency questionnaire, which evaluated both the quantity and sources of protein consumed. Researchers measured diversity by looking at the number of different protein-rich foods eaten weekly and how varied the protein sources were in terms of nutritional attributes. Over nearly two decades of follow-up, the study tracked 1,045 cases of CVD, including 668 cases of coronary heart disease (CHD) and 332 strokes.

The findings showed no strong associations between total protein intake and the risk of CVD, CHD, or stroke. While a higher number of protein sources consumed weekly (referred to as “protein count”) was weakly associated with a lower risk of CVD, the variety of nutritional attributes within these sources (“dissimilarity”) did not have a meaningful impact. Additionally, the diversity of animal-based or plant-based proteins was not linked to significant changes in cardiovascular outcomes.

Overall, the results suggest that protein consumption—whether by quantity or source—is not a significant factor in cardiovascular risk for middle-aged adults. The study highlights that other dietary and lifestyle factors may be more important for improving heart health than focusing solely on protein intake or source.

Tark et al. Nutrients. 2024 Nov 2;16(21):3773

Novel Insights into Milk Components for Allergy Treatment

A newly published study investigated the combined effects of human milk oligosaccharides (HMOs) and the milk fat globule membrane (MFGM) in reducing allergic reactions in a mouse model of cow's milk allergy (CMA). These components, found in human and bovine milk, are emerging as promising alternatives to conventional treatments, offering the added benefit of minimizing nutrient degradation compared to enzymatic digestion of milk proteins.

In the study, mice with β-lactoglobulin (BLG)-induced allergy showed significant improvements when treated with HMOs and MFGM. The combination effectively reduced allergy symptoms, lowered markers of inflammation (e.g., immunoglobulin E, histamine, and mMCP-1), and enhanced intestinal barrier integrity by increasing levels of proteins like ZO-1, claudin-1, and occludin.

This improvement was linked to reduced intestinal permeability, a common issue in allergies.

HMOs and MFGM also modulated the immune response by promoting Th1 and Treg cells, which counteracted the overactive Th2 response often seen in allergies. This led to a suppression of pro-inflammatory cytokines, further alleviating allergic symptoms.

A crucial mechanism behind these effects was the influence on gut microbiota. HMOs and MFGM increased the abundance of beneficial bacteria like Lactobacillus and Butyricicoccus, which boosted the production of butyrate, a short-chain fatty acid with known anti-inflammatory properties. This microbial shift also suppressed allergy-associated bacteria such as Desulfovibrio and Rikenellaceae, contributing to a healthier gut environment.

In summary, the study highlights the synergistic role of HMOs and MFGM in mitigating CMA by strengthening intestinal barriers, rebalancing immune responses, and promoting beneficial gut microbiota and butyrate production. These findings suggest that combining HMOs and MFGM could provide a novel therapeutic strategy for managing food allergies.

Chen et al. Food Funct. 2024 Nov 11;15(22):11252-11265.

In The News

The Key to Healthy Aging is a Healthy Mind… and Eating Cheese

As highlighted by the International Milk Genomics Consortium, a study in Nature Human Behaviour found that better mental well-being has a direct, protective impact on healthy aging, with cheese emerging as a notable dietary contributor. Using genetic data from 2.3 million individuals, researchers linked mental health to improved aging markers like resilience and longevity. Cheese mediated 3.5% of the mental health-aging relationship, thanks to its nutrient density and probiotics.

2025 trends released

Trends for 2025 have been highlighted by FMCG Gurus! “The Mantra is Well-Being” hits the top 3, with consumers actively prioritizing time for rest, relaxation, and health maintenance through self-care practices.

Global sleep aid supplement market to reach $11.8 billion by 2034

A report by Allied Market Research projects that the global sleep aid supplement market will grow at a compound annual growth rate (CAGR) of 5.1%, reaching $11.8 billion by 2034. This growth is attributed to rising stress levels, irregular sleep patterns, and increased awareness of sleep hygiene, leading consumers to seek natural sleep aids. The expansion of online and retail distribution channels is also enhancing market accessibility. The article notes that sleep has become a key trend for those seeking holistic health solutions, with consumers increasingly demanding products that enhance sleep quality.

Have Questions? Let’s Talk.

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