

THE EFFECT OF SYNBIOTIC SUPPLEMENTATION ON HYPOTHYROIDISM: A RANDOMIZED DOUBLE-BLIND PLACEBO CONTROLLED CLINICAL TRIAL

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Despite the increased awareness and the improvements in medical management of hypothyroidism, depression, mood disturbance and poor health-related quality of life (QoL) is common among hypothyroid patients. Synbiotics have been advocated as being beneficial to patients with metabolic diseases. Synbiotics are a mixture of probiotics and prebiotics that beneficially affect the host by improving the survival and stimulating the growth of advantageous and health promoting microbial species in the gastrointestinal tract. The aim of this study was to examine whether synbiotic supplementation could enhance depression, QoL, and blood pressure, as well as thyroid hormones in hypothyroid patients. This study is a 10-week parallel design randomised placebo-controlled trial. Participants – adults with hypothyroidism - were randomly assigned to the synbiotic (n = 28) or the placebo (n = 28) group. Results show that following 10 weeks supplementation with synbiotics (500 mg of 10⁹ CFU/g probiotics plus fructo-oligosaccharide) in comparison to placebo does not affect serum thyroid stimulating hormone level and depression. However, it significantly improved blood pressure levels and various domains and areas of QoL. Authors conclude that further clinical trials are needed to assess the effectiveness of a synbiotic supplementation along with the current routine treatment for hypothyroid patients

VITAMIN D AND MARINE OMEGA 3 FATTY ACID SUPPLEMENTATION AND INCIDENT AUTOIMMUNE DISEASE: VITAL RANDOMIZED CONTROLLED TRIAL.

Hahn, J ; Cook, NR ; Alexander, EK ; et al.
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The authors highlight that autoimmune conditions are the third highest cause of morbidity in high-income nations and a primary cause of death in females. These diseases bear significant health, economic and social burdens considering the sparsity of remediation. Vitamin D and marine derived, long chain Omega 3 fatty acids are being investigated in this study as potential treatments to attenuate the risk of autoimmune conditions, including autoimmune thyroid disease. The study objective was to assess whether Vitamin D and marine derived long chain Omega 3 fatty acids can decrease autoimmune disease risk.

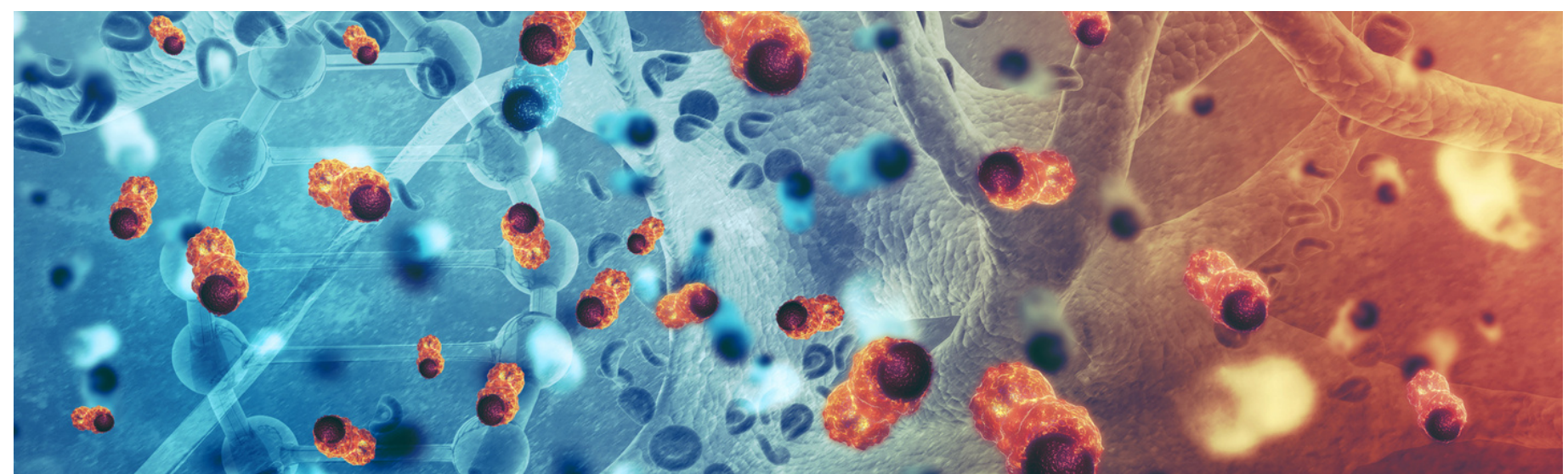
This is a randomized, double blinded, placebo controlled trial in the United States, which included 12 786 men ≥50 years and 13 085 women ≥55 years. It was concluded that Vitamin D supplementation for five years, with or without omega 3, diminished autoimmune conditions by 22%; whereas omega 3 supplementation with or without vitamin D reduced autoimmune diseases by 15% (not statistically significant). Both interventions demonstrated more significant effects than the placebos.



ASSESSMENT OF CAUSAL ASSOCIATION BETWEEN THYROID FUNCTION AND LIPID METABOLISM: A MENDELIAN RANDOMIZATION STUDY

Wang, JJ ; Zhuang, ZH ; Shao, CL ; et al.
Chinese medical journal. 2021;134(9):1064-1069

Obesity, dyslipidaemia, and metabolic syndrome are major risk factors for cardiovascular disease, however, effect of thyroid dysfunction on dyslipidaemia and cardiovascular disease is largely unknown. This study used mendelian randomisation (MR), where a genetic variant is used as an instrumental variable to detect the causal effects of exposure to disease. This study used two sample MR analyses to find out whether clinical thyroid function measures show a causal relationship with the changes in lipid levels. The results showed a significant association between the elevated thyrotropin (TSH) level and increased total cholesterol. Also, there was a significant correlation between the free triiodothyronine (FT3): free thyroxine (FT4) ratio and total cholesterol and low-density lipoprotein (LDL). Further robust studies are required to confirm the results and investigate the causal effect of thyroid hormone dysregulation and cardiometabolic diseases due to the limitations of this study. However, healthcare professionals can use the results of this study to understand the importance of the pituitary-thyroid-cardiac axis in lipid metabolism and its impact on cardiometabolic health.



EFFECT OF SELENIUM ON THYROID AUTOIMMUNITY AND REGULATORY T CELLS IN PATIENTS WITH HASHIMOTO'S THYROIDITIS: A PROSPECTIVE RANDOMIZED-CONTROLLED TRIAL

Hu, Y ; Feng, W ; Chen, H ; et al.
Clinical and translational science. 2021;14(4):1390-1402

Hashimoto thyroiditis (HT) is the most common thyroid autoimmune disease. Multiple factors contribute to the development of the disease leading to immune system-mediated destruction of the thyroid gland. In the absence of specific therapeutic approaches that address the immunological activity, thyroid hormone replacement is the primary treatment. Selenium (Se) is an essential trace element for humans and the thyroid gland utilises high amounts of selenium for the production of enzymes and antioxidants. Supplementing Se has shown positive effects in HT, as demonstrated in some studies. Yet, there have been inconsistencies in the results and the understanding of the mechanisms involved are limited. The authors of this prospective, randomized controlled study tried to shed some light on the efficacy of Se supplementation and its mechanisms. For this 43 HT-patients on no thyroid medication, these received 200mcg Se per day for 6 months. Assessed were various markers including antibodies, thyroid stimulating hormone (TSH), antioxidant enzymes and T-helper immune cells that regulate immunological activity, which were compared to the HT-control group (n=47) and healthy individuals (n=36). The outcome of the intervention showed that Se supplementation can reduce thyroid antibodies, and TSH and can increase antioxidant enzymes in patients with HT and along with the findings the authors discussed some potential mechanisms at play. This study suggests that supplementary Se can benefit HT, particularly subclinical HT.

