

ASSOCIATION BETWEEN SERUM VITAMIN D LEVEL AND GRAVES' DISEASE: A SYSTEMATIC REVIEW AND META-ANALYSIS

Pang, B ; Li, L ; Liu, X ; Cao, Z ; Pang, T ; Wang, Q ; Wei, J
Nutrition journal. 2024;23(1):60

Graves' disease (GD) is an autoimmune disorder that leads to hyperthyroidism and is characterised by the overproduction of thyroid hormones. Recent studies have suggested a potential link between vitamin D (VD) levels and autoimmune thyroid diseases, including GD. The primary aim of this study was to systematically review and analyse the association between serum VD levels and GD, assessing whether low VD levels are linked to the disease's prevalence or severity.

This research is a systematic review and meta-analysis, incorporating data from multiple observational studies that examined the relationship between serum VD levels and GD.

Results showed that: - patients with GD had significantly lower serum VD levels compared to healthy controls. - a higher prevalence of VD deficiency was observed in patients with GD. - lower VD levels were associated with increased disease activity scores in GD patients.

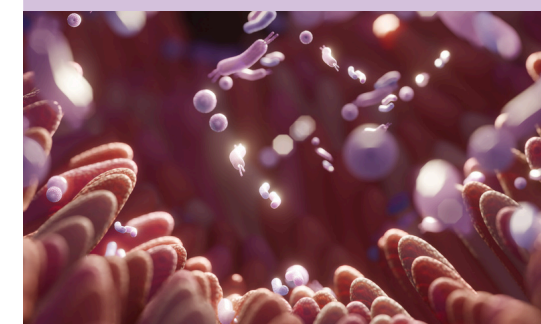
Authors concluded that low VD levels may increase the risk of GD. Larger and more comprehensive clinical research is needed to determine if VD insufficiency contributes to the onset of GD and whether VD supplementation is a viable treatment strategy for GD.

EXPLORING THE ROLE OF GUT MICROBIOTA IN AUTOIMMUNE THYROID DISORDERS: A SYSTEMATIC REVIEW AND META-ANALYSIS

Alkader, DAA ; Asadi, N ; Solangi, U ; et al.
Frontiers in endocrinology. 2023;14:1238146

Autoimmune thyroid disorders (AITDs), such as Hashimoto's thyroiditis (HT) and Graves' disease (GD), are influenced by genetic, environmental, and immunological factors. Recent research suggests that gut microbiota may play a significant role in the pathogenesis of AITDs. The primary aim of this study was to evaluate the role of gut microbiota in the development and progression of autoimmune thyroid disorders. This study was a systematic review and meta-analysis, incorporating data from multiple observational studies and clinical trials that investigated the composition and function of gut microbiota in patients with AITDs.

Results showed that: - people with both GD and HT had significantly different gut microbiota in terms of diversity and composition. - patients with HT had greater diversity indices than healthy participants, whereas those with GD had lower values. - patients with GD also had a greater relative abundance of Bacteroidetes and Actinobacteria. - TPOAb (thyroid peroxidase antibodies) levels are often associated with changes in the diversity of microbiota. Authors concluded that their findings suggest that targeting gut microbiota could be a potential therapeutic strategy for managing AITDs. However, further research is needed to understand the precise mechanisms and to develop effective microbiota-based interventions.

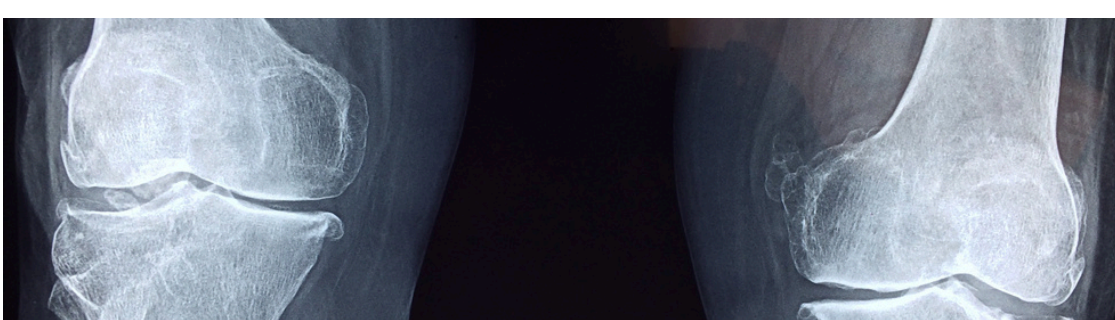


CHANGES IN BONE DENSITY AND MICROARCHITECTURE FOLLOWING TREATMENT OF GRAVES' DISEASE AND THE EFFECTS OF VITAMIN D SUPPLEMENTATION. A RANDOMIZED CLINICAL TRIAL

Grove-Laugesen, D ; Ebbelohj, E ; Watt, T ; et al.
Osteoporosis international : a journal established as result of cooperation between the European Foundation for Osteoporosis and the National Osteoporosis Foundation of the USA. 2024;35(12):2153-2164

Graves' disease, an autoimmune disorder leading to hyperthyroidism, can significantly impact bone health, resulting in decreased bone density and altered bone microarchitecture. The aim of this study was to evaluate changes in bone density and microarchitecture following treatment for Graves' disease and to assess the additional effects of vitamin D supplementation. This research is a randomised clinical trial involving patients diagnosed with Graves' disease, who were divided into groups receiving standard treatment with or without vitamin D supplementation.

Results showed that 9 months supplementation with a daily dose of 70 µg vitamin D3 did not improve areal or volumetric bone mineral density (BMD), bone microarchitecture or estimated bone strength in a population with an adequate dietary calcium intake. The only significant effect of vitamin D was a smaller increase in PTH level compared to placebo, whereas there was no impact on bone turnover markers. Authors concluded that 9 months of high dose vitamin D3 supplementation does not offer benefit by improving skeletal health.



ADD-ON EFFECT OF SELENIUM AND VITAMIN D COMBINED SUPPLEMENTATION IN EARLY CONTROL OF GRAVES' DISEASE HYPERTHYROIDISM DURING METHIMAZOLE TREATMENT

Gallo, D ; Mortara, L ; Veronesi, G ; et al.
Frontiers in endocrinology. 2022;13:886451

Graves' disease (GD) is the most frequent cause of hyperthyroidism in iodine-replete geographical areas. Thionamide anti-thyroid drug therapy is the first-line treatment worldwide under most circumstances, but its major limitation is the high rate of relapses after drug discontinuation. Decreased serum concentrations of selenium (Se) and vitamin D (VitD) have been reported in newly diagnosed GD patients in observational studies. The aim of this study was to determine if concurrent supplementation with Se and VitD in Graves' patients with suboptimal or low Se and VitD levels may improve early control of hyperthyroidism during methimazole (MMI) [thionamide] treatment. This study is a small, randomised, single-blinded, controlled, intervention trial. Forty-two patients were randomly assigned to treatment with MMI monotherapy (Group 1, MMI alone group) or MMI combined with Se and VitD (Group 2, intervention group).

Results show that supplementation favours a significantly better control of hyperthyroidism, both at short-term (45 days) and long-term (180 and 270 days) assessments. In fact, during MMI treatment, Se and VitD supplementation facilitates restoration of euthyroidism and improves quality of life. Authors conclude that Se and VitD status should be assessed at diagnosis of GD, and that Se and VitD supplementation should be offered at adequate and safe dosages even if a slight deficiency of these micronutrients is found.

