

# NEWS UPDATES



JULY - 2023

## Vitamin D and Fracture Prevention – Negative

A trial of twenty-six thousand community-living adults in the U.S. were followed over five years. The individuals were randomized to receive 2000IU of vitamin D3 or a placebo daily. The average age was 67 years. Vitamin D supplementation had no effect on the total number of non-vertebral or hip fractures, or other osteoporotic fractures of the extremities. **Brett, A.S. JWatch.org. Vol.43, 1. Jan.1,2023.**

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## Negative Trial of Vitamin D and Fractures

An Australian trial of twenty-one thousand community-dwelling adults revealed little benefit of vitamin D supplementation on fracture rates. The age of the participants was between sixty to eighty-five. The group was randomized receiving either 60,000 IU of D3 or placebo monthly for five years. This trial also reported no reduction in mortality with vitamin D over six years. **Brett, A.A. JWatch.org. Vol. 43,10 May 2023.**

**Comment:** Over the years we had advised against the use of vitamin D supplementation in most Parasympathetic mineral patterns even when blood vitamin D levels are low in individuals with this pattern. We view the low vitamin D in these cases as a reflection of a metabolic disturbance and not a causative factor. The study mentioned below may help to explain the mechanism.

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## Magnesium and Vitamin D Activation

This excellent paper discusses the close relationship between magnesium and vitamin D. Nutrients often work in a mutual relationship. This is true of the vitamin D and magnesium relationship. The conversion of stored vitamin D to its active form as well as the enzymes that metabolize vitamin D require magnesium as a cofactor in enzymatic functions in the liver and kidneys. Optimum benefits of vitamin D whether from exogenous or endogenous sources is therefore magnesium dependent to maintain its bioactivity. The paper further discusses the low magnesium intake of the U.S. population due to low levels in foods, drug-induced magnesium losses, disease, and physiological requirements. They estimate that the standard diet contains only about fifty percent of the daily allowance and as much as three-quarters of the total population consumes a magnesium-deficient diet. **Role of Magnesium in Vitamin D Activation and Function. Uwitonze, A.M., et al. J. Am. Osteopathic Assoc. Vol. 118, 3. 2018.**

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## Magnesium and Hair Mineral Analysis

Interestingly the authors state that about 40% of the total body magnesium content is intracellular and almost 60% is contained in bones and teeth. With only about 0.3% present in the serum, serum measurements do not

reflect total body magnesium content and is not a good indicator of intracellular magnesium levels. Even when excessive magnesium is lost from the skeletal structures or intracellular tissue the circulating levels of magnesium can be within normal ranges.

Our view is that the HTMA can provide not only an indication of the tissue storage level of magnesium (absolute or relative deficiency states) it also provides information on the important interrelationships to other synergistic and antagonistic minerals.

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### **Magnesium Deficiency and Inflammation**

It is well known that inflammation can contribute to magnesium deficiency. Conversely, magnesium deficiency can contribute to inflammation via the activation of phagocytic cells, opening calcium channels, and activating NMDS receptors. Magnesium deficiency causes a systemic stress response through neuro-endocrine pathways. This paper cites clinical trials showing a relationship between magnesium deficiency and the pathophysiology of inflammatory disease including diabetes, asthma, atherosclerosis, rheumatoid arthritis, pre-eclampsia, and cardiac damage. ***The Role of Magnesium in Different Inflammatory Diseases. Shahi, A., et.al. Shahi, A., et.al. Immunopharmacology. 27,4. 2019.***

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### **Hair Magnesium Levels and Inflammatory Bowel Disease (IBD)**

This study investigated the hair magnesium concentration in patients with IBD compared to healthy controls. They found a significantly lower magnesium concentration in the IBD group. Magnesium measurements may be used as a predictive model for clinical or subclinical disease activity. ***Magnesium-A Potential Key Player in Inflammatory Bowel Disease? Gilca-Blanariu, G., Et.Al. Nutrients, 24,9, 2022.***

