

Researchers find low magnesium levels make vitamin D ineffective

February 26 2018

February 27, 2018—There is a caveat to the push for increased Vitamin D: Don't forget magnesium.

A review published in *The Journal of the American Osteopathic Association* found Vitamin D can't be metabolized without sufficient magnesium levels, meaning Vitamin D remains stored and inactive for as many as 50 percent of Americans.

"People are taking Vitamin D supplements but don't realize how it gets metabolized. Without magnesium, Vitamin D is not really useful or safe," says study co-author Mohammed S. Razzaque, MBBS, PhD, a professor of pathology at Lake Erie College of Osteopathic Medicine.

Razzaque explains that consumption of Vitamin D supplements can increase a person's calcium and phosphate levels even if they remain Vitamin D deficient. The problem is people may suffer from [vascular calcification](#) if their magnesium levels aren't high enough to prevent the complication.

Patients with optimum magnesium levels require less Vitamin D supplementation to achieve sufficient Vitamin D levels. Magnesium also reduces osteoporosis, helping to mitigate the risk of bone fracture that can be attributed to low levels of Vitamin D, Razzaque noted.

Deficiency in either of these nutrients is reported to be associated with various disorders, including skeletal deformities, cardiovascular diseases,

and metabolic syndrome.

While the recommended daily allowance for magnesium is 420 mg for males and 320 mg for females, the standard diet in the United States contains only about 50 percent of that amount. As much as half of the total population is estimated to be consuming a magnesium-deficient diet.

Researchers say the magnesium consumption from natural foods has decreased in the past few decades, owing to industrialized agriculture and changes in dietary habits. Magnesium status is low in populations who consume processed foods that are high in refined grains, fat, phosphate, and sugar.

"By consuming an optimal amount of magnesium, one may be able to lower the risks of Vitamin D deficiency, and reduce the dependency on Vitamin D supplements," says Razzaque.

Magnesium is the fourth most abundant mineral in the human body after calcium, potassium, and sodium. Foods high in magnesium include almonds, bananas, beans, broccoli, brown rice, cashews, egg yolk, fish oil, flaxseed, green vegetables, milk, mushrooms, other nuts, oatmeal, pumpkin seeds, sesame seeds, soybeans, sunflower seeds, sweet corn, tofu, and whole grains.

More information: *The Journal of the American Osteopathic Association* (2018). [DOI: 10.7556/jaoa.2018.037](https://doi.org/10.7556/jaoa.2018.037)

Provided by American Osteopathic Association

Citation: Researchers find low magnesium levels make vitamin D ineffective (2018, February

26) retrieved 24 April 2024 from <https://medicalxpress.com/news/2018-02-magnesium-vitamin-d-ineffective.html>

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