



# PRESS RELEASE

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## DO VITAMIN D SUPPLEMENTS OFFER KIDNEY-RELATED BENEFITS FOR INDIVIDUALS WITH HIGH DIABETES RISK?

*Trial shows no significant effects on kidney outcomes.*

### Highlights

- In a clinical trial of individuals at high risk for developing type 2 diabetes, which is the leading cause of kidney disease, vitamin D supplementation did not have significant effects on kidney health.
- As participants were not selected according to baseline vitamin D levels, investigators cannot exclude a kidney benefit for individuals with vitamin D deficiency.

**Washington, DC (August 6, 2021)** — A recent clinical trial described in *CJASN* has examined the potential of vitamin D supplementation for protecting the kidney health of individuals with pre-diabetes.

In the general population, low blood vitamin D levels have been associated with higher risks of various diseases, including type 2 diabetes and kidney disease. Sun H. Kim, MD, MS (Stanford University School of Medicine) and her colleagues conducted a secondary analysis of the Vitamin D and type 2 diabetes (D2d) study to evaluate the effects of vitamin D supplementation on kidney health in individuals with pre-diabetes, a condition that increases risk for type 2 diabetes, which in turn is the leading cause of kidney disease.

The study randomized 2,423 adults with overweight/obesity and pre-diabetes to vitamin D<sub>3</sub> 4000 IU per day or placebo, for a median treatment duration of 2.9 years. “The D2d study is unique because we recruited individuals with high-risk pre-diabetes, having 2-out-of-3 abnormal glucose values, and we recruited more than 2,000 participants, representing the largest vitamin D diabetes prevention trial to date,” said Dr. Kim.

During the trial, there were 28 cases of kidney function worsening in the vitamin D group and 30 in the placebo group, and the average change in kidney function during follow-up

was similar in both groups. “Our results did not show a benefit of vitamin D supplements on kidney function. About 43% of the study population was taking outside-of-study vitamin D, up to 1000 IU daily, at study entry, though. Among those who were not taking any vitamin D on their own, there was a suggestion for vitamin D lowering the amount of urine protein over time, which means that it could have a beneficial effect on kidney health. Additional studies are needed to look into this further.”

Dr. Kim added that vitamin D supplementation is popular, and it’s difficult for clinical trials of vitamin D supplementation to show a benefit if the population studied is not vitamin D deficient. “The majority of the study population had sufficient blood vitamin D levels and normal kidney function,” she said. “Benefits of vitamin D might be greater in people with low blood vitamin D levels and/or reduced kidney function.”

Study co-authors include Irwin G. Brodsky, MD, Ranee Chatterjee, MD, MPH, Sangeeta R. Kashyap, MD, William C. Knowler, MD, DrPH, Emilia Liao, MD, Jason Nelson, MPH, Richard Pratley, MD, Neda Rasouli, MD, Ellen M. Vickery, MS, Mark Sarnak, MD, MS, and Anastassios G. Pittas, MD, MS.

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The article, titled “Effect of Vitamin D Supplementation on Kidney Function in Adults with Prediabetes: A Secondary Analysis of a Randomized Trial,” will appear online at <http://cjasn.asnjournals.org/> on August 6, 2021, doi: 10.2215/CJN.00420121.

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