

# Clinical study to examine role of vitamin D in kidney disease

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Vitamin D is the key to preventing rickets and osteoporosis, but Rockefeller University scientists suspect it may also play a role in heading off atherosclerosis in people with chronic kidney disease.

In a new clinical study, investigators at The Rockefeller University Hospital are examining patients with moderately reduced kidney function to investigate the effect of vitamin D therapy on endotoxemia, a condition that is common among those with renal disease and is widely viewed as a contributor to heart disease. The study, led by Instructor in Clinical Investigation Manish Ponda, is partially funded by a \$25,000 grant from the Center for Clinical and Translational Science.

The high rate of atherosclerosis among patients with kidney disease is well documented but little understood by medical experts. Endotoxins, products of the natural breakdown process of bacteria, are a hot topic of clinical investigation with regard to both heart and kidney disease. “The number one killer among people with kidney disease is heart disease, just like in the rest of the population, except that in people with kidney disease, the heart disease exhibits an accelerated course,” says Ponda, a member of Jan Breslow’s Laboratory of Biochemical Genetics and Metabolism at Rockefeller. The research is an extension of earlier clinical work by Ponda that showed a high incidence of vitamin D deficiency among early-stage kidney disease patients.

Study participants — males and postmenopausal females between ages 50 and 80 with stage three chronic kidney disease and vitamin D

deficiency — will be provided with thrice-weekly doses of vitamin D3, also known as cholecalciferol, the form of vitamin D produced by the body in response to sunlight. Participants will make three outpatient visits at intervals of four weeks each to The Rockefeller University Hospital, where investigators test for levels of endotoxins in response to vitamin D repletion.

The dose of vitamin D prescribed for the study — 30,000 international units per week — equals more than 20 times the intake recommended by the United States Department of Agriculture and approximately 10 times the amount in an average multivitamin supplement. The dosage is designated to safely reverse vitamin D deficiency.

If Ponda’s hypothesis — that vitamin D repletion will be accompanied by decreases in blood endotoxin levels — holds true, a larger, more-extensive, “progression” study will follow, to chart the connection over longer periods of treatment and in later stages of renal disease. “Kidney disease puts a person at significantly higher risk for cardiovascular disease, but it is often asymptomatic even as late as stage three,” says Ponda. “The more definitively we can characterize renal disease, the closer we are to effectively treating both it and its comorbid conditions.”

Provided by Rockefeller University Hospital

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