Vitamin D reduces blood pressure and relieves depression in women with diabetes

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In women who have type 2 diabetes and show signs of depression, vitamin D supplements significantly lowered blood pressure and improved their moods, according to a pilot study at Loyola University Chicago Niehoff School of Nursing.

Vitamin D even helped the women lose a few pounds.

The study was presented at the American Diabetes Association 73rd Scientific Sessions in Chicago.

"Vitamin D supplementation potentially is an easy and cost-effective therapy, with minimal side effects," said Sue M. Penckofer, PhD, RN, lead author of the study and a professor in the Niehoff School of Nursing. "Larger, randomized controlled trials are needed to determine the impact of vitamin D supplementation on depression and major cardiovascular risk factors among women with Type 2 diabetes."

Penckofer recently received a four-year, $1.49 million grant from the National Institute of Nursing Research at the National Institutes of Health to do such a study. Penckofer and her Loyola co-investigators plan to enroll 180 women who have type 2 diabetes, symptoms of depression and insufficient levels of vitamin D. Women will be randomly assigned to receive either a weekly vitamin D supplementation (50,000 International Units) or a matching weekly placebo for six months. The study is titled "Can the Sunshine Vitamin Improve Mood and Self Management in Women with Diabetes?

About 1 in 10 people in the United States has diabetes, and the incidence is projected to increase to 1 in 4 persons by 2050. Women with type 2 diabetes have worse outcomes than men. The reason may be due to depression, which affects more than 25 percent of women with diabetes. Depression impairs a patient's ability to manage her disease by eating right, exercising, taking medications, etc.

Many Americans do not get enough vitamin D, and people with diabetes are at especially high risk for vitamin D insufficiency or deficiency. Reasons include limited intake of foods high in vitamin D, obesity, lack of sun exposure and genetic variations.

The pilot study included 46 women who were an average age of 55 years, had diabetes an average of 8 years and insufficient blood levels of vitamin D (18 ng/ml). They took a weekly dose (50,000 International Units) of vitamin D. (By comparison, the recommended dietary allowance for women 51 to 70 years is 600 IU per day.)

After six months, their vitamin D blood levels reached sufficient levels (average 38 ng/ml) and their moods improved significantly. For example, in a 20-question depression symptom survey, scores decreased from 26.8 at the beginning of the study (indicating moderate depression) to 12.2 at six months (indicating no depression. (The depression scale ranges from 0 to 60, with higher numbers indicating more symptoms of depression.)

Blood pressure also improved, with the upper number decreasing from 140.4 mm Hg to 132.5 mm Hg. And their weight dropped from an average of 226.1 pounds to 223.6 pounds.

Penckofer is internationally known for her research on vitamin D, diabetes and depression. In October, she will be inducted as a Fellow in the American Academy of Nursing for her scientific contributions in

improving the health and quality of life of women with chronic disease. And she recently was appointed as the first nurse researcher to the Chicago Diabetes Center for Translational Research.

Provided by Loyola University Health System