Low vitamin D levels may contribute to development of Type 2 diabetes

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A recent study of obese and non-obese children found that low vitamin D levels are significantly more prevalent in obese children and are associated with risk factors for type 2 diabetes. This study was accepted for publication in The Endocrine Society's *Journal of Clinical Endocrinology & Metabolism* (JCEM).

High rates of vitamin D deficiency have been found in obese populations and past studies have linked low vitamin D levels to cardiovascular disease and type 2 diabetes. The mechanisms by which obesity and its comorbidities are related to vitamin D deficiency are not fully known. This new study examined associations between vitamin D levels and dietary habits in obese children, and tested whether there were correlations between vitamin D levels and markers of abnormal glucose metabolism and blood pressure.

"Our study found that obese children with lower vitamin D levels had higher degrees of insulin resistance," said Micah Olson, MD, of The University of Texas Southwestern Medical Center in Dallas and lead author of the study. "Although our study cannot prove causation, it does suggest that low vitamin D levels may play a role in the development of type 2 diabetes."

In this study, researchers measured vitamin D levels, blood sugar levels, serum insulin, BMI and blood pressure in 411 obese subjects and 87 control non-overweight subjects. Study participants were also asked to provide dietary information including daily intake of soda, juice and

milk, average daily fruit and vegetable intake, and whether or not they routinely skipped breakfast.

"Poor dietary habits such as skipping breakfast and increased soda and juice intake were associated with the lower vitamin D levels seen in obese children," said Olson. "Future studies are needed to determine the clinical significance of lower vitamin D levels in obese children, the amount and duration of treatment necessary to replenish vitamin D levels in these children and whether treatment with vitamin D can improve primary clinical endpoints such as insulin resistance."

More information: The article, "Vitamin D Deficiency in Obese Children and Its Relationship to Glucose Homeostasis," appears in the January 2012 issue of JCEM.

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