

Vitamin D Status in Lean and Obese Mexican American Children

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ABSTRACT

Vitamin D deficiency is a worldwide problem amongst adolescents and adults, particularly in minority populations due to high skin melanin content. Melanin blocks the absorption of UVB photons, which limits natural vitamin D accumulation, requiring more dietary intake of vitamin D. Vitamin D deficiency is associated with an increased risk for chronic diseases like cardiovascular disease and diabetes mellitus. Low levels of vitamin D are inversely correlated with systemic inflammation possibly mediating the relationship between vitamin D deficiency and disease. Adequate levels of vitamin D may decrease the risks of chronic diseases, including cardiovascular disease, diabetes mellitus, common cancers, and autoimmune diseases. Obesity is associated with an increased risk of vitamin D deficiency, because vitamin D can become sequestered deep in subcutaneous adipose tissue, where it is biologically inert. In the US, Mexican-Americans are at a higher risk for both obesity and obesity-associated chronic diseases, making them an ideal research population. Objective: Investigate the relationship between serum vitamin-D status and systemic inflammation in Mexican-American children of differing obesity status. Patients and Methods: Serum vitamin D concentration will be measured using a commercially available ELISA kit. Vitamin D status will be determined using norms established by the Institute of Medicine in 2010. Serum TNF- α , IL-6, and IL-8 concentration will be measured using a Luminex Multiplex assay (Millipore Milliplex).