Measuring Vitamin D Levels in Wisconsin Residents

Findings inform public health recommendations and clinical practices guidelines on adequate vitamin D levels.

**Description:** The Genetic and Environmental Predictors of Serum Levels of 25-hydroxyvitamin D project analyzed data from 303 people enrolled in the Survey of the Health of Wisconsin (SHOW) to determine how amounts of sun exposure based on change in skin color, amounts of vitamin D intake from foods and supplements, and genetic factors interact to influence levels of vitamin D in the blood.

**Relevance:** Vitamin D is critical for health, and low levels in the blood are associated with bone disease, cancer, autoimmune diseases, infectious diseases and type 2 diabetes. Sunlight absorbed through the skin is an important source of vitamin D, along with intake from foods and supplements. Yet there is little data on how these behavioral factors interact with genetic factors to affect levels of vitamin D in the blood.

**Results:** Findings indicated that genes and both sun exposure and vitamin D intake may interact to influence vitamin D concentrations in the blood. This has important implications for the design of genetic studies of all health outcomes and for public health recommendations and clinical practices guidelines regarding the achievement of adequate vitamin D levels.

The project led to several new collaborations with clinicians and three additional grant applications. Project data also contributed to the hands-on experience of graduate and medical students in a new genetic epidemiology course. One manuscript is under review and a second is in preparation.

---

**GENETIC AND ENVIRONMENTAL PREDICTORS OF SERUM LEVELS OF 25-HYDROXYVITAMIN D**

**Principal Investigator:** Corinne Engelman, MSPH, PhD, Population Health Sciences, SMPH

**Grant Program:** New Investigator

**Award:** $90,000 over two years