Researchers show link between vitamin D status, breast cancer

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Using newly available data on worldwide cancer incidence, researchers at the Moores Cancer Center at University of California, San Diego and the Department of Family and Preventive Medicine have shown a clear association between deficiency in exposure to sunlight, specifically ultraviolet B (UVB), and breast cancer.

UVB exposure triggers photosynthesis of vitamin D3 in the body. This form of vitamin D also is available through diet and supplements.

Approximately 1,150,000 cases and 410,000 deaths from breast cancer occur annually worldwide, including 215,000 new cases and 41,000 deaths in the United States.

The study is published in the May-June 2008 issue of *The Breast Journal*.

“This is the first study, to our knowledge, to show that higher serum levels of vitamin D are associated with reduced incidence rates of breast cancer worldwide,” said Cedric F. Garland, Dr. P.H., professor of Family and Preventive Medicine in the UCSD School of Medicine, and member of the Moores UCSD Cancer Center.

This paper used worldwide data only recently available through a new tool called GLOBOCAN, developed by the World Health Organization’s International Agency for Research on Cancer. GLOBOCAN is a database of cancer incidence, mortality and prevalence for 175

countries.

The researchers created a graph with a vertical axis for breast cancer incidence rates, and a horizontal axis for latitude. The latitudes range from -50 for the southern hemisphere, to zero for the equator, to +70 for the northern hemisphere. They then plotted age-standardized incidence rates for 175 countries according to latitude. The resulting chart was a parabolic curve that looks like a smile.

“In general, breast cancer incidence was highest at the highest latitudes in both hemispheres,” said Garland. “Even after controlling for known variables such as meat, vegetable and alcohol intake, cigarette consumption, weight, fertility and others, the inverse association of modeled vitamin D status with breast cancer incidence remained strong.”

In the paper, the authors caution that this was a study of aggregates, or countries, rather than individuals; findings that apply to aggregates may not apply to individuals. They recommend further research to study individuals for the effect of vitamin D from sunlight, diet and supplements on the risk of breast cancer.

Source: University of California - San Diego