

Canada examines vitamin D for swine flu protection

By Lorraine Heller, 10-Aug-2009

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The Public Health Agency of Canada (PHAC) has confirmed that it will be investigating the role of vitamin D in protection against swine flu, NutraIngredients-USA.com has learned.

The agency started a study last year on the role of vitamin D in severe seasonal influenza, which it said it will now adapt to the H1N1 swine flu virus.

"Researchers in PHAC are working with colleagues at McMaster University and with partners at other universities and hospitals to determine whether there is a correlation between severe disease and low vitamin D levels and/or a person's genetic make up. This line of research in seasonal influenza will be adapted to H1N1," wrote the agency in an e-mail to NutraIngredients-USA.com.

PHAC said it is testing serum samples to examine this possibility in collaboration with colleagues at the University of Toronto.

Preventing 'severe outcomes'

Part of the researchers' goal is to understand if vitamin D levels are in any way responsible for the fact that most people with seasonal influenza develop a mild illness but a small minority go on to develop severe symptoms.

According to PHAC, results from its study will indicate the extent and nature of the role of vitamin D in severe seasonal influenza. The agency said it would most likely take at least three influenza seasons to be able to recruit a sufficient sample size of individuals with severe disease and controls before the results can be "meaningfully" analyzed.

"If we find that there is a correlation between severe disease and vitamin D levels we shall, with our partners in the future, conduct randomized controlled studies to determine the whether vitamin D can be used as a means to mitigate severe seasonal influenza," it said.

"PHAC intends to adapt this strategy to H1N1 in order to prevent severe outcomes of infection."

Experimental models

The agency stressed that the role of vitamin D in H1N1 is not well established. However, it added that early work in the 1940s, in experimental animal models, indicated that mice that receive diets low in vitamin D are more susceptible to experimental swine flu infection than those that receive adequate vitamin D (Young, 1946).

In addition, PHAC said that epidemiological evidence suggests a role for vitamin D in seasonal influenza in general.

"Influenza infection is correlated geographically and seasonally with levels of solar ultraviolet radiation (Cannell, 2006). Given that vitamin D is synthesized in our skin on exposure to sunlight, low serum levels of 25(OH) vitamin D in winter months appear to correlate with the occurrence of seasonal influenza in the winter. However a direct causal relationship between low vitamin D levels and the risk of influenza remains to be proven."

"How vitamin D might protect against influenza infection is not fully understood. However new research suggests that vitamin D induces the production of antimicrobial substances in the body that possess neutralizing activity against a variety of infectious agents including influenza virus (Doss, 2009)."

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