

Vitamin D insufficiency linked to heart disease

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Heart disease has a long list of known causes, including smoking, obesity and diabetes. But researchers in the United States now say there may be another and somewhat surprising addition to this list: vitamin D insufficiency.

Although it is well known that vitamin D is needed for good bone health, a study released yesterday found that not having enough of the sunshine vitamin is also linked to a higher risk of heart disease.

The research, based on a group of white Americans living near Boston, found that those with low levels of vitamin D in their blood were 62 per cent more likely to develop heart failure, strokes and other circulatory problems than those with more of the nutrient.

Those with both high blood pressure and low vitamin D status had about twice the risk of developing serious cardiac-related problems.

"Vitamin D deficiency is associated with increased cardiovascular risk, above and beyond established cardiovascular risk factors," said Thomas Wang, the study's lead author and an assistant professor at Harvard Medical School in Boston.

"The higher risk associated with vitamin D deficiency was particularly evident among individuals with high blood pressure."

He said the finding raises the possibility that people may be able to reduce their risk of heart disease by treating vitamin D deficiency through supplements or lifestyle changes.

The study's results could have public-health implications for Canadians, who are typically at risk of vitamin D deficiency because of the country's northern latitude. It is not possible in Canada to make the sunshine vitamin the natural way - through the exposure of naked skin to strong sunlight - for about six months a year during fall and winter, and even longer in the most northern areas. This causes nutrient levels to plunge over the winter.

"A substantial portion of people living in temperate regions are probably vitamin D deficient or insufficient," observed John White, a professor in the departments of physiology and medicine at McGill University in Montreal.

Cardiovascular disease, including stroke, is Canada's leading cause of mortality, with about 75,000 people dying annually from it, or about 32 per cent of male

deaths and 34 per cent of female deaths.

The new U.S. study, which is appearing in the current issue of *Circulation*, the journal of the American Heart Association, was based on blood tests of 1,739 people from the Framingham, Mass., area, where the annual period during which people can't naturally produce vitamin D is about the same as in Toronto. About 28 per cent of participants were considered to have inadequate vitamin D status.

Framingham is the site of the world's longest-running research project into the causes of heart disease, and previous studies have made such path-breaking discoveries as its link to smoking and high cholesterol.

Researchers have been intrigued by a possible link between low vitamin D status and heart disease because of observations that coronary heart disease and hypertension rates rise with increasing distance from the equator, where the intense sunlight allows year-round production of high levels of the nutrient.

To test the hypothesis that vitamin D is linked to heart disease, researchers analyzed the amounts of the nutrient in blood samples taken between 1996 and 2001 from healthy individuals of an average age of 59 who didn't exhibit signs of heart disease.

Over a follow-up period of about five years, 120 participants developed heart failure and other cardiac-related problems. Those with low vitamin D status were found to be at far higher risk of these ailments.

According to the study, one possibly explanation is that vitamin D receptors are found in cells throughout the heart and in other parts of the circulatory system, including the inside lining of blood vessels. The genes in these cells may malfunction when they don't get enough of the nutrient. Low vitamin D status may also cause an increase in inflammation.

Dr. Wang said there isn't yet enough information to develop a heart disease prevention strategy using vitamin D. Further clinical studies into the effects on heart health of correcting for vitamin deficiencies would be needed to figure out whether the approach would work and what doses would be needed, he said.

Funding for the research was provided by the U.S. government and the American Heart Association.

In light of the finding, the association recommends that people try to get adequate amounts of the vitamin through diet. Vitamin D is found naturally in salmon, mackerel, sardines and cod liver oil. It is also added to milk and some other foods.

The new finding is one of many recent discoveries about the health effects of vitamin D. Last year, U.S. researchers found that taking vitamin D supplements reduced the risk of cancer. In response to the study, and other research showing the vitamin may have an anti-cancer effect, the Canadian Cancer Society began

recommending people take up to 1,000 international units of the vitamin daily. A cup of milk contains about 100 IU.

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