Is vitamin D all it is said to be?

Vancouver Coastal Health
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Dr Paul Martiquet, Medical Health Officer

In some circles, Canada could be considered a risk factor for cancer. Then again, so are the northern states of the U.S. And northern Europe. See a theme developing?

In the mid-1970s, two brothers, Frank and Cedric Garland were attending a presentation on the geographical incidence of cancer across the United States. They noticed that the highest incidence rates of colon cancer all appeared at the top of the map while low rates were all in the southern part of the country. From this they developed a hypothesis that vitamin D was somehow connected to cancer (sounds simple, but it took six years).

The Garlands' hypothesis was that sunlight has an anti-cancer effect through its role in manufacturing vitamin D in the skin. As one lives farther north, exposure to sunshine decreases which in turn increases the risk of cancer. Quite the hypothesis.

Underlying the hypothesis was the idea that humans evolved in sun-filled climates near the equator and developed biological processes that made use of rich levels of vitamin D. If we were all still basking under the hot sun year-round, our risk of cancer would drop. Unfortunately, in Canada the sun is only strong enough for half the year; during the fall and winter it is too weak to produce any vitamin D. Since almost all of the vitamin D in our bloodstream is made in a photochemical reaction to the sun, this means we experience a deficiency for half the year.

Multiple studies have made the link between the vitamin and cancers, including breast, colon and prostate cancer. However, new links are being found between vitamin D deficiency and other health concerns: chronic ailments like multiple sclerosis, diabetes, heart disease, influenza and schizophrenia. A study in Finland also linked high levels of vitamin D (2,000 International Units daily) in children to an 80 percent drop in juvenile diabetes.

The answer to how much vitamin D should we be receiving varies depending on the source. Health Canada recommends 200 to 600 International Units (IU) daily for adults, to a maximum of 2,000 IU. However, many working in the field back up their findings by taking 1,500 or more IU daily. The Canadian Cancer Society recommends 1,000 IU daily; the Canadian Pediatric Association recommends 2,000 IU daily for pregnant or breastfeeding women.

Very few foods contain vitamin D. These include cod liver oil with 1,300 IU per tablespoon; wild salmon with 1,000 IU per service (farmed comes in at 250 IU); sardines have 600 IU and an egg yolk just 25. It is unlikely that a person's needs can be met with diet alone. We need the sun and maybe supplements.

The summer sun at midday will produce 10,000 IU in about half an hour in a white person (and yes, we are aware of the concern over skin cancer, but this is just to illustrate). In fall and winter, production drops to essentially nil as the sun is not strong enough.

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The function of vitamin D in the body is still not completely understood, but it appears that virtually every cell in the body has receptors for it, and hundreds of genes seem to be regulated by vitamin D.

While we still do not fully understand how vitamin D works, we can show it plays an important function in human health. And best of all? You now have definitive evidence that a winter sojourn in Mexico or Hawaii really is for medical reasons.

Dr Paul Martiquet is the Medical Health Officer for Rural Vancouver Coastal Health including Powell River, Sunshine Coast, Sea-to-Sky, Bella Bella and Bella Coola.