



Vitamin D: The new wonder drug



By Dr. Delia Roberts

Nutritional fads come and go, but it looks like the evidence for widespread health benefits of Vitamin D (Vit D) is here to stay. At the very least it is clear that people in poor health often have low blood levels of Vit D, and some studies suggest that higher levels of Vit D can be protective against the development of certain diseases. Let's explore where we get Vit D, how it's used in the body and what we now know about how it might help maintain good health.

Vit D – the sunshine vitamin

By definition, vitamins have to be consumed in the diet. But Vit D is unusual in that we can also synthesize it in our bodies in the presence of UV light. Unfortunately, there are two problems with getting enough sunlight to make all the Vit D we need. Firstly, in Canada, most of the year the sun is so low on the horizon it's hard to get enough UV exposure to make Vit D. Experts estimate that it takes approximately 5–30 minutes of sun exposure between 10 AM and 3 PM at least twice a week to the face, arms, legs, or back without sunscreen to make enough Vit D. Glass and tight-weave clothing block UV light, so it has to be warm enough outside that you'd be willing to wear shorts and a sleeveless top, or go shirtless. Cloud blocks about 50% of the UV light, so it also has to be a clear day, and shade blocks about 60% so you have to stay in direct sunlight. Properly applied sunscreen with an SPF of higher than 8 also blocks enough UV to prevent Vit D synthesis, which brings up the second problem. Exposure to UV light is known to contribute to the development of skin cancer. If you are careful, it is possible to get enough

sun to make Vit D without causing skin damage, but in reality, it's unlikely that with our climate we can get the sun exposure needed to make enough Vit D on a regular basis.

Vit D can be stored

Vitamin D is fat-soluble, which means that it can be stored in the body but also that when taken in from dietary sources, it requires fat to be absorbed. Once again, this raises two points. One, since Vit D can be stored, theoretically, you could make enough Vit D to last you all year long by spending your summer at the beach. One study actually looked at this and determined that in cultures where sunbathing is popular, people can meet their Vit D requirements in this manner. The second point is that people who have trouble absorbing fats, such as in those with inflammatory bowel diseases like Crohn's or Celiac Disease, are at risk for low Vit D levels. Oddly, obese people are also at a higher risk for low Vit D levels because the excess fat just below the skin hoards Vit D and makes it harder for sun generated vitamin to get into the bloodstream.

Dietary sources of Vitamin D

There are only a few foods that are naturally high in Vit D (fatty fish like salmon, tuna and mackerel) and to a lesser extent, beef liver, egg yolks, cheese and some mushrooms. But because of the importance of this vitamin, milk (35–40 IU/100 mL) and margarine (≥ 530 IU/100 g) are fortified by law in Canada. Some manufacturers also add Vit D to yogurt, orange juice and ready to eat cereals. In spite of this, it's still difficult to obtain the preferred amount of Vit D without supplementation.

Vitamin D in supplements and fortified foods is found in two forms, Vit D2 (ergocalciferol) and D3 (cholecalciferol). They are manufactured by different processes (D2 is derived from irradiated yeast and D3 is from irradiated cholesterol). They differ only in the chemical structure of a side chain, both can be used equally well by the body when taken in normal amounts. Sunlight produces D3 in the body, and mushrooms are the main source of D2.

Whether generated by the body from UV light, eaten in natural or supplemented foods, or consumed as a pill, all Vit D has to go through two further activation steps in the body before becoming biologically active. The first step takes place in the liver,

the second in the kidney which means that people with either liver or kidney disease are at risk for low levels of the active form of Vit D and require special means of meeting their Vit D requirements.

Recommended intakes

Measuring the level of active Vit D in the blood is difficult and very expensive, and is not necessary for most people. Instead, scientists have re-evaluated how much Vit D should be consumed on a daily basis. The recommended daily intake for adults aged 19-70 years as set by the Food and Nutrition Board at the Institute of Medicine at the National Academies and accepted by the Canadian Medical Association is now set at 600 IU. Some scientists though, believe that it is not only safe to consume up to 4000 IU/day, amounts closer to 2000 IU/day are necessary to protect against disease. One way to look at it is to supplement with the recommended 600 IU/day in pill form, and assume that between dietary sources and sun exposure, you will top your Vit D levels up enough to insure good health. Taking Vit D supplements in excess of these amounts has not been shown to improve health and at very high levels Vit D can even be toxic.

Some medications can interfere with the absorption or use of Vit D in the body. Steroid medications, high cholesterol drugs or those needed to stop epileptic seizures all lower Vit D levels. If you are taking one of these drugs or one that blocks fat absorption be sure to discuss your Vit D needs with your physician or pharmacist.

Bone health

The best understood function of Vit D is its role in building and maintaining strong bones. It's needed by the body to absorb calcium in the gut, and is responsible for stimulating the healthy development and growth of bone in the immature skeleton. In adults, the actions of Vit D on bone cells maintains bone, adding to areas that are under stress and removing bone from areas that are not loaded. This function also adjusts blood levels of calcium and phosphate as are needed by other areas of the body.

In more recent times, receptors for Vit D have been found on many other cell types in addition to bone cells, and we now know that it plays a role in the normal development and death of many cells as well as in inflammation. This has led to the investigation of the protective role for Vit D in the prevention of cancer (especially colon, prostate, and breast cancers) and a healthy immune system. One large review showed that higher levels of Vit D helped

reduce the number and severity of asthma attacks. It also appears that Vit D is needed for the neuromuscular system, and may be important for the prevention of diseases like Multiple Sclerosis (MS). There is some evidence that low Vit D levels have been associated with increased risk of development of MS and that supplementation may slow the progression of the disease. However, studies that compare the rates of these diseases and others (diabetes and cardiovascular disease have also been investigated) are not conclusive. Sometimes lower Vit D levels are found in populations with higher rates of the disease and higher Vit D levels are found in those with lower rates of the disease, but not all studies show this effect and supplementation does not always prevent the disease. More good quality studies are needed before we can say for sure whether or not Vit D can prevent these diseases, and if the vitamin is protective, what amounts of it are needed for a beneficial effect.

If you aren't sure about whether you should be taking a Vit D supplement, discuss your diet, lifestyle and disease risk with your physician. The science suggests that if you don't get regular exposure to the sun, you should think about using a daily Vit D supplement. 🍌

Good mental health matters as much as physical

Six signs of good mental health are if you feel like **YOU**:

1. Are reaching YOUR POTENTIAL
2. BELONG
3. Make the world a BETTER PLACE
4. DON'T WORRY about what others think of you
5. ENJOY your life
6. Can be knocked down and you will GET BACK UP again, and again.

According to the Canadian Mental Health Association, mental health is more than being happy all the time. It's about feeling good about who you are, having balance in your life, and managing life's highs and lows. Everyone deserves to feel well, and, we all need a support system to lean on.

Forest Safety Ombudsman to brief NDP caucus on HEMS report

The BC Forest Safety Ombudsman, Roger Harris, provided the BC NDP caucus with a briefing on his Helicopter Emergency Medical Services (HEMS) report, on May 16.

Last year, the Union of BC Municipalities voted to support the recommendations contained in the report. Since then several petitions have called on the government to support improved critical care access to remote communities that would benefit workers and all other community members.

You may read the report here: <http://www.bcforestsafe.org/node/2909> 🍌

Tools you can use and share

Canadian Mental Health Association: <https://cmha.ca/>

Man Therapy: <http://mantherapy.org/>

Suicide Prevention Resources from the CMHA: <https://cmha.ca/documents/preventing-suicide>

Excellent video on the effects of depression: <https://vimeo.com/159136856>

The most important thing is to talk. Choose someone you trust and you know will listen; or choose a confidential anonymous hotline to call. Help and crisis line numbers as well as other mental health support near you can be found here: <http://www.crisislines.bc.ca/>

BC crisis lines provide three million minutes of support to people in need each year which means a person connects with a confidential line worker every 2.7 minutes. Support is available 24/7, 365 days a year. You are not alone. 🍌

Wildfires require proper safety masks

As part of an access to information request by CBC News, the RCMP acknowledged that during a wildfire review they established that not all officers had been provided with the appropriate masks when they worked the Fort McMurray wildfire in 2016.

They should have all been equipped with 3M half-face masks. Instead officers had paper-filter N95 masks, or didn't wear any, leaving respiratory side effects, coughing spells and shortened lives.

The lesson for all is that if you are exposed to wildfires, do not compromise your or your workers' health and safety by using inappropriate masks.

See the CBC story in full here: <http://www.cbc.ca/news/canada/edmonton/fort-mcmurray-wildfire-rcmp-safety-masks-1.4621705> and WorkSafeBC requirements: <https://www.worksafebc.com/en/health-safety/tools-machinery-equipment/personal-protective-equipment-ppe/types/respiratory-protection> 🍌

Red Shirt Foundation report on sawmill workplace violence



The foundation formed after a Nanaimo mill shooting in April 2014, when Michael Lunn and Fred McEachern died and Tony Sudar and Earl Kelly were injured, has recently released a report, *Workplace Violence in Sawmills in BC*. See:

<https://www.nanaimobulletin.com/news/red-shirt-foundation-report-on-mill-workplace-violence-released/>. To read the full 154-page report, please see: <http://redshirtfoundation.com/> (scroll down on the homepage for a link to the pdf as well as other useful tools to help support respectful workplaces.) 🍌