

## UV, Vitamin D and Health Key Messages

On March 8, 2006 the first North American scientific conference on UV, Vitamin D and Health took place in Toronto. At the conference, clinicians and researchers from the United States, Canada and Australia presented information about the health effects of vitamin D, methods of obtaining vitamin D, and the health risks of UV radiation exposure.

Following the conference, national health organizations met to develop consistent health messaging for the public about skin-cancer prevention and vitamin D. These organizations represented the areas of cancer, dermatology, nutrition, public health, bone health and autoimmune diseases in Canada and the United States. The following key messages reflect this collaborative work. This document is intended to assist health clinicians, health-care providers and those working in health promotion in developing their own messaging for providing guidance to their patients and the public.

These key messages have been endorsed by the American Cancer Society, American College of Rheumatology, Canadian Cancer Society, Canadian Dermatology Association, Dietitians of Canada, National Council on Skin Cancer Prevention (US), Osteoporosis Canada, and the World Health Organization Collaborative Centre for the Promotion of Sun Protection. The key messages were also developed with technical support in consultation with staff from the US Centers for Disease Control and Prevention.

### Key messages

1. There is strong evidence of the harms of exposure to UV radiation from the sun and other sources, including skin cancer, melanoma and some cataracts. Based on expert consensus, sun protection is required when the UV index is 3 (moderate) or higher.<sup>1-5</sup>
2. There is strong evidence of the benefits of adequate vitamin D status on musculoskeletal health and prevention of fractures in the elderly. There is also a growing body of evidence that vitamin D may have beneficial effects on some types of cancer, in particular colorectal cancer. Experts are concerned that vitamin D status may be too low in the general population to achieve these health benefits.<sup>1,6-14</sup>
3. Vitamin D is obtained through skin exposure to UVB radiation, and also through diet (particularly fortified foods) and supplementation. To minimize the health risks associated with UVB radiation exposure while maximizing the potential benefits of optimum Vitamin D status, supplementation and small amounts of sun exposure are the preferred methods of obtaining vitamin D.

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The known risks associated with unprotected UVB exposure must be weighed against its benefits as a source of vitamin D. For example, it is possible that just a few minutes a day of unprotected sun exposure will increase vitamin D status, but for some, may also increase the risk of skin damage. Factors such as age, diet, skin pigmentation, geographic location and intensity of the sun will affect the amount of sun exposure needed to produce adequate vitamin D. More research is needed in this area before any more specific recommendations can be made.<sup>15-17</sup>

4. Groups at risk of not obtaining adequate amounts of vitamin D include:
- the elderly;
  - exclusively breast-fed babies;
  - individuals with dark skin pigmentation;
  - individuals with limited skin exposure to the sun (e.g. housebound, or those who wear clothing covering most of the skin for cultural/religious reasons); and
  - those who during the winter are living above 37<sup>0</sup> latitude (Canada and Northern US).

If you are concerned about adequate vitamin D levels, discuss supplementation with your health care practitioner. For breast-fed babies, vitamin D drops are available on their own (only in Canada), or as part of a multi-vitamin drop, and are recommended as a supplementation source by health authorities both in Canada and the USA. For adults, current recommendations are 200 IU/day up to age 50, 400 IU for 50-70 and 600 IU over age 70. These recommendations are now considered too low by many experts for optimal health. The most appropriate supplementation level is likely to be above this but below the safe upper level of 2000 IU/day for adults. More research is needed to determine the optimal amount of vitamin D supplementation required to prevent health problems.<sup>13,14,16,18-21</sup>

In Canada, for more information about supplementation for breast fed babies you can go to Health Canada's website ([http://www.hc-sc.gc.ca/fn-an/nutrition/child-enfant/infant-nourisson/excl\\_bf\\_dur-dur\\_am\\_excl\\_e.html](http://www.hc-sc.gc.ca/fn-an/nutrition/child-enfant/infant-nourisson/excl_bf_dur-dur_am_excl_e.html)). In the United States, read more about the Centers for Disease Control and Prevention's recommendation ([http://www.cdc.gov/breastfeeding/recommendations/vitamin\\_D.htm](http://www.cdc.gov/breastfeeding/recommendations/vitamin_D.htm))

***More research is needed to clarify the following issues:***

- the optimum level of blood concentration and daily intake of vitamin D needed to maintain health;
- the amount of UVB exposure needed to synthesize optimum vitamin D in the skin; in particular, the appropriate recommendation given skin pigmentation, age and latitude. It appears that recommendations must be individualized based on age, skin pigmentation, geographic location and other factors;

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# North American Conference on UV, Vitamin D and Health

- the long-term risks, if any, of lifetime ingestion of large quantities of vitamin D; and
- the level of vitamin D sufficiency that is clinically relevant, decreasing the risk of health problems, such as cancer.

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