



Context

Vitamin D is important for the metabolism of bones and muscle, and has been shown to reduce rates of falling and bone fractures.¹⁻³ The value of vitamin D supplementation for elderly people in long-term care, and in particular, its role in preventing falls and fractures is of interest to decision-makers. But, guidelines for the use of this supplement vary. This scan of practices and policies within and across provinces shows the extent of vitamin D supplementation for elderly people in some Canadian long-term care facilities.

Elderly people living in residential care facilities are particularly at risk for vitamin D deficiency because they may not have sufficient exposure to sunlight, their diet may be inadequate, they may suffer from conditions that affect the synthesis or absorption of vitamin D, and with aging, the skin does not convert vitamin D as effectively.^{2,4,5}

Canada's Food Guide notes that, after the age of 50, the need for vitamin D increases, and that the level required cannot usually be reached through diet. The guide recommends that men and women over the age of 50 supplement their diet with 400 international units (IUs) of vitamin D per day, and that those over the age of 70 take a supplement of 600 IU of vitamin D per day.¹

A recent study of dietary vitamin D intake by 30 elderly residents of a Toronto veterans' care centre found that none of the residents received adequate intake through their regular diet.⁶ On average, the residents' vitamin D intake was less than 50% of the 600 IUs recommended by *Canada's Food Guide*.

The authors concluded that all long-term care residents should receive vitamin D supplementation of at least 400 IU to meet these requirements.⁶

The *Canada's Food Guide* recommendations are based on levels established by the US Institute of Medicine in 1997. Health Canada is contributing to the Institute's updated review of evidence for dietary intakes of vitamin D and calcium.⁷ This review is expected to be published in November 2010.⁸ Health Canada will be using the information to revise and implement their recommendations as appropriate.⁹

In the meantime, other agencies have raised their recommended daily intake for vitamin D. In September 2010, Osteoporosis Canada revised their earlier guidelines for serum testing levels for vitamin D, noting that:

*"To most consistently improve clinical outcomes such as fracture risk, an optimal serum level of 25-hydroxyvitamin D is probably above 75 nmol/L; for most Canadians, supplementation is needed to achieve this level."*²

The Osteoporosis Canada guidelines for adults over the age of 50 who are at moderate risk of vitamin D deficiency, now recommend supplements of 800 IUs to 2,000 IUs of vitamin D once daily (noting that up to 2,000 IUs per day is considered safe to take without medical supervision, and that many individuals will need the higher level of supplementation).^{2,10} The evidence-based guidelines also suggest that, to minimize the burden of pill-taking, a weekly dose of (10,000 IU) of vitamin D, may be more convenient for some patients, and that a monthly dose of 50,000 IU is also an option.² There was no cost-effectiveness analysis in these guidelines.

The Dietitians of Canada have endorsed the Osteoporosis Canada guidelines, and recommend that individuals on drug therapy for osteoporosis have their vitamin D levels tested (using a serum measurement of 25-hydroxyvitamin D) after three months of vitamin D supplementation.

The Canadian Cancer Society recommends that all adults at high risk for vitamin D deficiency take 1,000 IUs per day during fall and winter; and that older adults, those with dark skin, or those with limited exposure to sunlight, take 1,000 IUs per day throughout the year.¹¹

Objectives

To identify current policies or protocols for vitamin D supplementation for elderly individuals in residential care in Canadian jurisdictions (at national, provincial, regional or institutional levels), and other agencies.

Findings

The findings of this environmental scan are not intended to provide a comprehensive review of the topic. Results are based on a limited literature search and communications with key informants. This report is based on information gathered as of October 2010.

National

The Non-Insured Health Benefits for First Nations and Inuit include vitamin D (alfacalcidol, calcitriol, cholecalciferol, and ergocalciferol) in their drug benefits list. However, these drugs are only funded with a prescription from a licensed practitioner.¹²

Dr. Isabelle Germain, with Veterans Affairs Canada and McGill University, is currently investigating vitamin D intake in relation to the health of veterans living in long-term care facilities. The results of this research have not yet been published.

Provincial

In the summer of 2009, members of the Gerontology Network of the Dietitians of Canada conducted an informal survey of vitamin D and calcium supplementation across Canada. At that time, there were no policies at the provincial level mandating routine vitamin D supplementation in long-term care facilities, though some provinces list the supplement on their drug formulary and dietitians at individual centres encourage its use.¹³ Information gathered in October 2010 for this environmental scan is summarized in the table below.

Table 1: Summary of Findings

Province or Territory	Vitamin D Supplementation
British Columbia	<p>There is no formal guideline at the provincial level for vitamin D supplementation in long-term care.</p> <p>Recent guidelines from the BC Guidelines and Protocols Advisory Committee focus on vitamin D testing protocols and supplements for adults, and cite the Osteoporosis Canada guidelines recommending a minimum of 800 IUs of vitamin D, along with calcium, to reduce the risk of fractures, but they do not specifically discuss supplements for elderly residents in long-term care facilities.¹⁴</p> <p>The James Bay Lodge in Victoria, BC recommends vitamin D supplements for their residents at a dose of 1,000 IU per day; however, there is no formal policy that all residents routinely receive this supplement.</p>
Yukon	<p>Vitamin D is a benefit listed on the formulary for the Yukon Pharmacare (Seniors') program. As in BC, there is no official policy for vitamin D administration – it is prescribed by the resident's physician. About 60% of residents in Yukon nursing homes are taking vitamin D supplements and the average dose is 1,000 IUs per day.</p>

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Province or Territory	Vitamin D Supplementation
Northwest Territories	At present the Department of Health and Social Services does not have a policy for vitamin D supplementation in residential care facilities. But in a 2010 article on vitamin D, the Northern Nutrition Association called for a meeting of Northwest Territories health professionals, following the release of the US Institute of Medicine review, to develop standard recommendations for vitamin D suitable for their “geographic and cultural demographic.” ¹⁵
Nunavut	No territorial policies on vitamin D supplementation for elderly residents in long-term care were identified.
Alberta	<p>Practices vary across the province, and Alberta Health Services may be reviewing this issue, but currently there is no policy for routine vitamin D supplementation in long-term care facilities. Most long-term care facilities provide vitamin D supplementation as prescribed by a physician. At one Alberta facility, the usual dose is 1,000 IUs daily.</p> <p>CapitalCare, which manages eleven residential care facilities in Edmonton, has been considering this issue. The use of 1,000 IUs of vitamin D daily has been suggested, although some physicians are now prescribing 2,000 IUs daily.</p>
Saskatchewan	<p>There is no formal recommendation for vitamin D supplementation at the provincial level in Saskatchewan; however, dietitians support the use of this supplement, and individual physicians are prescribing vitamin D for their patients. The usual prescription is for 1,000 IUs daily.</p> <p>Dr. Susan Whiting, at the University of Saskatchewan, recently assessed the use of supplements in a long-term care facility in Saskatoon, and found that less than 40% of residents were receiving vitamin D supplements.</p>
Manitoba	The Winnipeg Regional Health Authority covers the costs of vitamin D supplementation as part of their falls prevention protocol. It is not given routinely, but provided following an assessment of the individual patient (e.g., assessing their diet and risk for falls, and with an order from their physician). Their most recent medication review suggested using vitamin D once weekly (at a dose of 10,000 IUs) or once monthly (at a dose of 50,000 IUs) to reduce the overall pill burden for patients. A draft clinical practice guideline has been developed by the health authority’s dietary program. ¹⁶
Ontario	Most long-term care homes in Ontario are providing vitamin D supplements as part of their fall prevention strategies. A promotional campaign from the Ontario Osteoporosis Strategy for Long-Term Care recommends both vitamin D and calcium for bone health protection for long-term care residents. For vitamin D, the recommended dose is 1,000 IUs daily (with a minimum of 800 IUs daily). ⁴ According to the campaign flyers, vitamin D improves muscle function, bone density, balance and coordination, and reduces pain and fractures, as well as it reduces falls by about 20%. ⁴
Quebec	No information on vitamin D supplementation in residential care was identified.
New Brunswick	The working group of dietitians in long-term care facilities in New Brunswick is awaiting the results of the US Institute of Medicine review (expected to be released in November 2010). ⁸ Dietitians, physicians, and nurse practitioners in New Brunswick are currently recommending or prescribing vitamin D supplements on an individual basis.

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Province or Territory	Vitamin D Supplementation
<p>Nova Scotia</p>	<p>The provincial government provides funding and guidelines that recommend calcium and vitamin D supplementation, but it is up to each facility to set-up and implement their own policies.</p> <p>A news item in a recent issue of the <i>Gerontology LINK Newsletter</i> describes a vitamin D and calcium supplementation program at the Nakile Home for Special Care in Nova Scotia.¹⁷ This program began in 2006, when the Nova Scotia Department of Health began covering the cost of these supplements. Their vitamin D protocol is outlined as follows:</p> <p>“We are presently in the process of changing our method of administering vitamin D supplements. While we had been providing 1,000 IU vitamin D tablets daily x 6 days/week for an intake of 850 IU/day, our Pharmacy Committee has decided to change to a monthly dose. Our plan is to provide 50,000 IU vitamin D once monthly for an intake of 1,600 IU/day. The cost is similar to the present regime, and both residents and staff will appreciate having fewer pills. 100% of our residents are taking vitamin D supplements and we continue to monitor vitamin D (25 OH) levels on all residents.”¹⁷</p>
<p>Prince Edward Island</p>	<p>No province-wide policy on vitamin D supplementation in long-term care was identified.</p>
<p>Newfoundland and Labrador</p>	<p>A team at Western Health in Newfoundland is developing a policy on calcium and vitamin D supplementation for long-term care residents in their region. A pilot project will run at one of their facilities before the policy is put in place across the region.</p> <p>Another regional health authority in Newfoundland, Eastern Health, has a policy for calcium and vitamin D supplementation for long-term care residents. The recommended dosage of vitamin D supplementation is 1,000 IUs daily. Unless contraindicated, standing orders for vitamin D and calcium supplementation are issued for all residents on admission and reviewed regularly by the physician or nurse practitioner. Eastern Health is in the process of implementing this policy in 17 long-term care facilities.</p>

BC = British Columbia; IU = international unit.

Conclusion

Many agencies may be waiting for the release of the US Institute of Medicine review on dietary reference intakes for vitamin D and calcium before developing or revising policies for vitamin D supplementation. This review is scheduled for release in November 2010.⁸

Complementing this environmental scan, CADTH recently prepared two summaries on

evidence for the clinical effectiveness of vitamin D supplementation in the elderly and in long-term care residents. These are available for free on the CADTH website.^{18,19} The most recent review, in August 2010, concluded that “the identified evidence supports vitamin D supplementation at a dose of at least 800 IU daily in residents of long-term care facilities to reduce the rate of falls.”¹⁸

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