



Clinical Biochemistry and Genetics  
MS543 - 820 Sherbrook Street, Winnipeg, Manitoba, Canada R3A 1R9 www.dsmanitoba.ca  
Phone: (204) 787-2843, Fax: (204) 787-3846

## Vitamin D Testing – Changes in Service, July 2008

Due to the recent high level of publicity surrounding supplemental vitamin D, requests for vitamin D tests have reached levels that are unsustainable using our current test method, staffing and available funding. 25-hydroxy-vitamin D remains the gold-standard test to assess vitamin D status of an individual where and when appropriate. To make the best use of the available resources, information is provided below regarding vitamin D supplements and testing. Requests for vitamin D (25-hydroxy) tests for pediatric patients and those from selected locations determined to have a greater clinical need will be given priority for testing. All other test requests will be done on a first-come first-serve basis, with the ability to reclassify samples as urgent if needed. Time to receive test results will be longer than in the past, your patience is appreciated. With improvements in technology and scientific justification, high-throughput systems that would increase capacity may be developed and implemented in the future.

*Screening for vitamin D deficiency in healthy individuals is generally not necessary. Avoiding test orders that are not required will improve turn around time for the remaining testing.*

**Low Risk for Vitamin D Insufficiency:** Vitamin D (25-hydroxy) should generally not be measured in individuals at low risk for vitamin D insufficiency (such as those below age 50 years without co-morbid conditions that affect vitamin D absorption or action (1)).

*Recommendation:* An individual's particular needs will depend on milk intake, concurrent use of multivitamins containing vitamin D and on summer sun exposure (2). If a vitamin D supplement is used, then 800-2000 IU/day for an adult is reasonable. The safe upper limit for vitamin D<sub>3</sub> supplements has not been well defined, but a daily dose of up to 2,000 IU is safe and does not require laboratory monitoring to avoid toxicity in adults (3). The Canadian Pediatric Society continues to recommend a vitamin D intake of 400 IU per day, with increase to 800 IU per day for babies north of the 55th parallel (4).

**Moderate Risk for Vitamin D Insufficiency:** In adult individuals at moderate risk for vitamin D insufficiency (such as those over age 50 years, with documented osteoporosis or fractures, or with conditions that affect vitamin D absorption or action), an adequate supplementation dose of vitamin D [800-2000 IU/day for an adult] is appropriate. Health Canada recommends that in addition to following Canada's Food Guide, all adults over the age of 50 should take a daily vitamin D supplement ([http://www.hc-sc.gc.ca/fn-an/food-guide-aliment/context/evid-fond/vita\\_d-eng.php](http://www.hc-sc.gc.ca/fn-an/food-guide-aliment/context/evid-fond/vita_d-eng.php)).

*Recommendation:* Serum vitamin D (25-hydroxy) does not need to be measured in these individuals, but if measurements are undertaken then these should follow at least 3-6 months of an adequate supplementation dose.

**High risk for vitamin D insufficiency:** In individuals at high risk for vitamin D insufficiency (such as those with recurrent fractures despite osteoporosis treatment or with documented osteoporosis and co-morbid conditions that affect vitamin D absorption or action), adequate supplementation with vitamin D and measurement of serum vitamin D (25-hydroxy) are appropriate.

*Recommendation:* Serum vitamin D (25-hydroxy) should be measured following 3-6 months of an adequate supplementation dose.





Clinical Biochemistry and Genetics  
MS543 - 820 Sherbrook Street, Winnipeg, Manitoba, Canada R3A 1R9 www.dsmanitoba.ca  
Phone: (204) 787-2843, Fax: (204) 787-3846

**Infants that are at high risk for vitamin D insufficiency:**

Profound maternal vitamin D deficiency can lead to severe vitamin D deficiency in infancy owing to lack of maternal stores to transfer to the baby. Such babies can present with hypocalcemic seizures or signs of rickets (5).

*Recommendation:* If mothers have had minimal pre-natal vitamins, minimal summer sun exposure and minimal milk intake during the last trimester of pregnancy; consider testing the infant and referring to a specialist for higher dose vitamin D supplementation if severely deficient.

**References:**

1. Schwalfenberg G. Not enough vitamin D: health consequences for Canadians. Can Fam Physician. 2007 May;53(5):841-54.
2. Bischoff-Ferrari HA, Giovannucci E, Willett WC, Dietrich T, Dawson-Hughes B. Estimation of optimal serum concentrations of 25-hydroxyvitamin D for multiple health outcomes. Am J Clin Nutr 2006 Jul;84(1):18-28.
3. Hathcock JN, Shao A, Vieth R, Heaney R. Risk assessment for vitamin D. Am J Clin Nutr 2007 Jan;85(1):6-18.
4. Canadian Paediatric Society Position Statement (FNIM 2007-01). Vitamin D supplementation: Recommendations for Canadian mothers and infants. Paediatric Child Health 2007 Sep;12(7):583-589. available at <http://www.cps.ca/english/statements/ii/fnim07-01.htm>
5. Ward LM, Gaboury I, Ladhani M, Zlotkin S. Vitamin D-deficiency rickets among children in Canada. CMAJ 2007 Jul 17;177(2):169-71.

**If you have any questions or concerns relating to this topic please contact the appropriate person(s) listed below:**

**Clinical management:**

*Adult patient concerns:*

Dr. William Leslie  
Director, Manitoba Bone Density Program  
tel. 204-235-3664  
email: [bleslie@sbgh.mb.ca](mailto:bleslie@sbgh.mb.ca)

*Pediatric patient concerns:*

Dr. Shayne Taback  
Pediatric Endocrinologist  
WRHA Child Health Program  
tel. 204-787-1222  
email: [tabacksp@cc.umanitoba.ca](mailto:tabacksp@cc.umanitoba.ca)

**Laboratory testing:**

Dr. Laurel Thorlacius, PhD, FCACB  
Medical Director, Clinical Biochemistry and Genetics, DSM  
tel. 204-787-8858  
email: [lthorlacius@hsc.mb.ca](mailto:lthorlacius@hsc.mb.ca)

Dr. Tom Dembinski, PhD, FCACB  
Clinical Biochemist, DSM  
tel. 204-237-2474  
email: [tdembinski@sbgh.mb.ca](mailto:tdembinski@sbgh.mb.ca)

