

**D-Spot**    25-hydroxyvitamin D3    Accession # 360156

**Healthcare Professional:**

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**Patient:**

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**Gender :** M

**Date of Birth :**

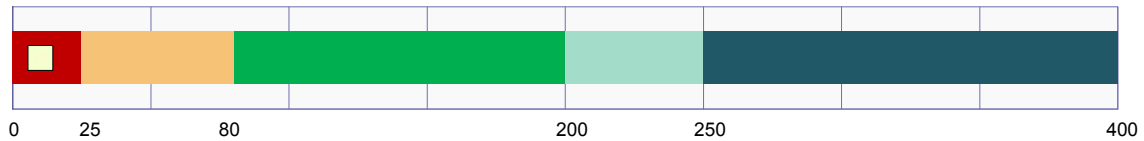
**Age :**

Phone:

Fax:

Test	Result	Units	Vitamin D Status
25-hydroxyvitamin D3	10	nmol/L	Severe Deficiency

### 25-hydroxyvitamin D3



- Severe Deficiency**      <25 nmol/L
- Mild to Moderate Deficiency**      25 to 80 nmol/L
- Optimal**      80 to 200 nmol/L
- High**      200 to 250 nmol/L
- Toxicity Possible**      >250 nmol/L

**DISCLAIMER**

The literature on Vitamin D is extensive, with new publications appearing almost daily. We have attempted to provide a summary of some of the most recent literature for various disease states, if these have been noted by the patient on the requisition. We want to emphasize that although many disease states are associated with low levels of 25-hydroxyvitamin D3, causality has not been established. It is also not clear-cut whether supplementation with Vitamin D3 in the face of low levels of 25-hydroxyvitamin D3 will be beneficial, in every disease state, although some results are encouraging. Ultimately, the decision whether to supplement with Vitamin D3 is one that has to be made by the clinician familiar with the patient's clinical situation

**ELITE ATHLETES AND VITAMIN D**

Vitamin D deficiency or insufficiency is apparently common in elite athletes. An article by Angeline et al reports, "A recent study from the Hospital for Special Surgery in New York examined the vitamin D levels from 89 players on a single National Football League team and found that 30% of the players were deficient while 51% had insufficient levels (unpublished data from one of the study authors). The players with muscle injuries were found to have significantly lower vitamin D levels than were uninjured players. A similar study examined 18 elite Australian gymnasts and found that 15 had insufficient levels, and 6 of these athletes had deficient levels."

Adequate intramuscular levels of Vitamin D contribute to proper muscle development and function. Angeline et al go on to cite research on Vitamin D receptor-knockout mice: "A VDR knockout mouse model demonstrated a phenotype with abnormal muscle fiber development and maturation.

As a result, the rodents were found to have poor motor and balance function, as indicated by poor swimming ability." Furthermore, the level of 25-hydroxyvitamin D has also been shown to be positively correlated to muscle power, force, velocity, and jump height, and hand grip strength.

Seasonal variation in athletic performance has been noted for at least 50 years, and appears to be associated with seasonal variation in serum markers of Vitamin D.

Angeline et al conclude: "Despite the lack of level 1 evidence, the sports medicine physician should be aware of the effects of vitamin D deficiency on athletic performance and overall musculoskeletal health, including such potential problems as stress fractures and muscular injuries. Based on the current evidence, we recommend assessing total serum 25(OH)D3 levels in high-risk athletes and treating those who show deficient or insufficient levels."

Am J Sports Med 2013 Feb;41(2):461-4. The effects of vitamin D deficiency in athletes. Angeline ME, Gee AO, Shindle M et al.

**EFFECT OF SUPPLEMENTATION WITH VITAMIN D3 in TYPE II DIABETES**

An 8 week study (Talaie) of 100 individuals with Type II Diabetes suggested that fasting insulin and glucose levels were lowered significantly by supplementation with 50,000 U of Vitamin D3 per week. These findings, although promising, remain to be verified by a much larger and longer study.

In another 6 month study (Huang) of Chinese patients with Type II Diabetes, supplementation with 800 IU of Vitamin D3 significantly reduced protein excretion in patients with macroscopic levels of albumin in their urine.

Diabetol Metab Syndr. 2013 Feb 26;5(1):8. doi: 10.1186/1758-5996-5-8. The effect of vitamin D on insulin resistance in patients with type 2 diabetes. Talaie A, Mohamadi M, Adgi Z.

PLoS One. 2012;7(11):e50510. doi: 10.1371/journal.pone.0050510. Epub 2012 Nov 29. Oral supplementation with cholecalciferol 800 IU ameliorates albuminuria in Chinese type 2 diabetic patients with nephropathy. Huang Y, Yu H, Lu J et al.



George Gillson, MD PhD  
Medical Director

Note: The College of Physicians and Surgeons of Alberta considers some laboratory tests to be non-standard, or a form of complementary and alternative medicine. These interpretation comments have not been evaluated or approved by any regulatory body. Commentary is provided to clinicians for educational purposes and should not be interpreted as diagnostic or treatment recommendations.