Nordic Laboratories

PATIENT:	**Sample Report**			TEST REF:	**TST-XXXXX**
TEST NUMBER:	TN123456	COLLECTED:	mm/dd/yy	PRACTITIONER:	**Nordic Laboratories**
PATIENT NUMBER:	PN123456	RECEIVED:	mm/dd/yy	ADDRESS:	XXXXXXX
GENDER:	Female	TESTED:	mm/dd/yy		
AGE:	00				
DATE OF BIRTH:	mm/dd/yyyy				

TEST NAME: Vitamin D Bloodspot

Vitamin D; blood spot

RESULTS			
	RESULT ng/mL	REFERENCE INTERVAL	OPTIMAL (LOW | MOD- | MEAN | MOD+ | HIGH)
25-Hydroxyvitamin D Total	**11**	40– 80	
25-Hydroxyvitamin D_2	**< 3**		
25-Hydroxyvitamin D_3	**11**		

25-Hydroxyvitamin D is the major circulating form of vitamin D, occurs in 2 forms: vitamin D_2 (ergocalciferol) and vitamin D_3 (cholecalciferol), and is the precursor of the active form (1,25-dihydroxyvitamin D). Because of its long half-life, measurement of total 25-Hydroxyvitamin D (D_2 plus D_3) provides the best assessment of patient vitamin D status and includes vitamin D derived from diet, supplements and exposure to UVB light (e.g. sunlight). Vitamin D is best known for its role in calcium and bone metabolism but emerging research indicates that low levels of vitamin D may be associated with increased risk of some cancers, type 2 diabetes mellitus, multiple sclerosis, cardiovascular disease, rheumatoid arthritis, depression, Alzheimer's disease, infections, preeclampsia, cesarean deliveries and neurocognitive dysfunction. Vitamin D regulates the expression of a vast array of genes in tissues including immune cells, the vasculature, muscle and reproductive organs. Vitamin D insufficiency is common and deficiency can have adverse health effects at any stage of life.

Many testing methods do not differentiate between the 2 forms of Vitamin D and only total concentrations are reported. This LC/MS QQQ method is sensitive and specific for both Vitamin D_2 and D_3, and each form is measured and reported independently.

Reference Intervals

Due to geographic location, ethnic background, and seasonal variation, population-based reference values for vitamin D do not correlate well with clinically relevant vitamin D effects and are of limited clinical value. The following reference intervals are similar to those of the 2011 Endocrine Society Practice Guidelines and apply to males and females of all ages.

< 10 ng/ml (< 25 nmol/L) - severe deficiency. May be associated with osteomalacia or rickets (children). Serum calcium and phosphate may be low and, parathyroid hormone and serum alkaline phosphatase may be abnormally high.

< 20 ng/ml (< 50 nmol/L) - deficiency. Increased risk of osteoporosis and secondary hyperparathyroidism.

20 - < 40 ng/ml (50 - < 100 nmol/L) - moderate deficiency to suboptimal. In addition to insufficient intake and exposure to UVB light, consider malabsorption syndromes (e.g. pancreatic insufficiency, Celiac or Crohn's disease), hepatic or kidney disease, and prolonged use of medications such as antifungals, antiseizure drugs, cholestyramine and glucocorticoids.

40 - 80 ng/ml (100 - 200 nmol/L) - optimal levels in a healthy population.

> 100 ng/ml (> 250 nmol/L) - elevated. Toxicity is usually associated with vitamin D levels > 150 ng/ml (> 375 nmol/L) for prolonged periods of time.

References

Peterlik M, Cross HS. Vitamin D and calciuminsufficiency-related chronic diseases: anemerging world-wide public health problem. Int J Environ Res Public Health. 2009;6:2585-2607.

Holick MF, Binkley NC Bischoff-Ferrare HA, et al. Evaluation,Treatment, and Prevention of Vitamin D Deficiency: An Endocrine Society Clinical Practice Guideline. J Clin Endocrinol Metab (2011)96(7):1911-30.

Institute of Medicine (US)Committee to Review Dietary Reference Intakes for Calcium and Vitamin D, Washington, DC: The National Academies Press, 2011.

Souberielle JC, Body JJ, Lappe JM et al. Vitamin D and Musculoskeletal Health, Cardiovascular Disease, Autoimmunity and Cancer: Recommendations for Clinical Practice. Autoimmune Rev (2010)9(11)709-15.

Chen P, Hu P, Xie D, et al. Meta-analysis of Vitamin D, Calcium, and the Prevention of Breast Cancer. Breast Cancer Res Treat (2010)121(2):469-77.

SPECIMEN DATA			
Comments:			
	Time Collected:	Methodology:	LC/MS QQQ
	Fasting:		

v05.12

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