

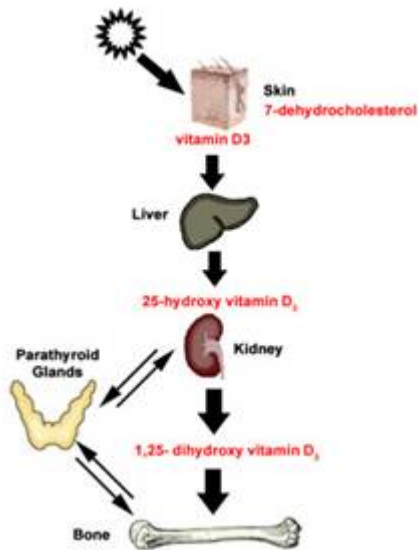
Pearl of Knowledge
Evidence-based Summary Documents



Vitamin D Treatment and Monitoring Guideline

Vitamin D deficiency is common and its clinical importance is increasingly recognized. Vitamin D testing is expensive and for most healthy patients without risk factor the actual measurement of vitamin D 25 levels is not necessary. Vitamin D supplementation alone is sufficient and safe.

<i>Patient Population</i>	<i>Initial Treatment (Loading)</i>	<i>Maintenance Treatment</i>	<i>Role of 25-hydroxyvitamin D Monitoring</i>
Healthy with Risk Factor Absent	NA	2000 IU/day (cholecalciferol)	None
Disease or Risk Factors Present	2000 IU/day x 12 wks (cholecalciferol)	NA	Obtain 25-hydroxyvitamin D @ 12 weeks to determine therapy
Pregnancy	NA	4000-6000 IU/day (cholecalciferol) Alternatively: 50,000 IU (ergocalciferol) 1x/wk	None
Baseline Vitamin D-25 Level:			
>40 ng/ml			
Optimal Level >40 ng/ml	NA	1000-2000 IU/day (cholecalciferol)	None
Sufficiency (>30 ng/ml)	NA	2000 IU/day (cholecalciferol)	None
Relative Insufficiency (21-29 ng/ml)	NA	2000 IU/day (cholecalciferol)	Measurement of 25-hydroxyvitamin D may not be needed
Deficiency (10-20 ng/ml)	50,000 IU (ergocalciferol) 1x/wk x 12 weeks	NA	Measure 25-hydroxyvitamin D @ 12 wks following treatment
Severe Deficiency (<10 ng/ml)	50,000 IU (ergocalciferol) 2x/wk x 12 weeks	NA	Measure 25-hydroxyvitamin D @ 12 wks following treatment



Risk Factors:

- Dark Skin
- Intestinal malabsorption
- Inflammatory Bowel disease
- Gastric bypass
- No sun exposure
- Osteomalacia/Fragility Fractures
- Anticonvulsant therapy
- Renal Disease
- Refugees/Immigrants

Additional Information:

- Some suggest optimal levels may be in the range of 50-60 ng/ml
- Toxicity requires sustained serum levels of >100 ng/ml
- Toxic dosing >10,000 IU/day for an extended period of time
- Risk of hypercalcemia exists in setting of sarcoidosis, metastatic bone disease
Hyperparathyroidism
- Patient on HCTZ will recycle calcium; consider holding calcium supplements during ergocalciferol loading
- Patient with gastric bypass may require 50,000 (ergocalciferol) IU 3-7 x/wk
- 2 ng/ml = 5 mmol/L Vitamin 25 (OH), D

Workgroup:

- John Hering, MD
- Teresa Kovarik, MD
- Doug Olson, MD
- Ann Rinehart, MD
- Michael Schoenleber, MD
- Patricia Walker, MD
- Art Wineman, MD

Resources:

Vitamin D Deficiency

NEJM: Vol. 357:266-281, July 19,2007

<http://content.nejm.org/cgi/content/full/357/3/266>

The urgent need to recommend an intake of vitamin D that is effective

American Journal of Clinical Nutrition: Vol. 85, No. 3, 649-650, March 2007

<http://www.ajcn.org/cgi/content/full/85/3/649>

Vitamin D supplementation and total mortality: a meta-analysis of randomized controlled trials.

Arch Internal Med. 2007 Sep 10;167(16):1730-7

http://www.ncbi.nlm.nih.gov/pubmed/17846391?ordinalpos=1&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum

Vitamin D Testing Market Reaches \$600 Million

Laboratory Economics Vol. 4 No. 1 January 2009 p.4

Medicare Considers Denying Payment for Routine Vitamin D Testing

<http://www.darkdaily.com/ebriefings/medicare-considers-denying-payment-for-routine-vitamin-d-testing>

High Prevalence of Vitamin D Insufficiency in Black and White Pregnant Women Residing in the Northern United States and Their Neonates

J. Nutr.137:447-552, 2007

<http://jn.nutrition.org/cgi/content/abstract/137/2/447>

Treatment of Vitamin D deficient States

Up to Date; Dawson-Hughes MD

<http://www.uptodate.com/patients/content/topic.do?topicKey=~DCGFFoPmvhuwbfU>

Questions:

Please reply to this e-mail, and your questions(s) will be directed to the author of this Pearl, Doug Olson, MD

All Pearl recommendations are consistent with professional society guidelines, and reviewed by HealthPartners Physician Leadership.