

EDUCATION GRAM™
Recommendations For The Treatment Of Vitamin D Deficiency
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Vitamin D is obtained from a person’s diet, dietary supplements, or sunlight exposure. Solar UVB radiation from sunlight converts 7-Dehydrocholesterol in the skin to form previtamin D₃, which is subsequently converted to vitamin D₃. Sources of vitamin D may also be found naturally in oily fish or from fortified foods. A deficiency in vitamin D, defined as a serum 25-hydroxyvitamin D level < 20 ng/ml, may be a predictor of bone health, risk for cancer, and other chronic disease.

Diagnosis: Screening for vitamin D deficiency using serum 25-hydroxyvitamin D levels is not required for asymptomatic adults or during pregnancy. There are certain risk factors that categorize patients as high risk for vitamin D deficiency, and screening is recommended for the following patient groups.

- **High Risk:**
 - Dark skinned
 - Obese
 - Medications enhance vitamin D metabolism
 - Hospitalized on a general medical service
 - Institutionalized
 - Limited sun exposure
 - Osteoporosis
 - Malabsorption

Recommendation for Adults:

Deficiency	Vitamin D2 50,000 IU once weekly for 8 weeks. Repeat for another 8 weeks if 25-hydroxyvitamin D <30 ng/ml
Maintenance	Vitamin D3 800 once daily

Choice of Therapy:

- **The Endocrine Society Recommendations for Treatment and Prevention¹**

	Deficiency – Vitamin D₂ or vitamin D₃	Maintenance
Infants and Toddlers 0 – 1 year	2000 IU/d for 6 weeks Or 50,000 IU once weekly for 6 weeks	400 – 1000 IU/d
Children 1 -18 years	2000 IU/d for 6 weeks, Or 50,000 IU once weekly for 6 weeks	600 – 1000 IU/d
Adults	6000 IU/d for 8 weeks Or 50,000 IU once weekly for 8 weeks	1500 – 2000 IU/d
Obese, malabsorption, or medications affecting vitamin D metabolism	6000 – 10,000 IU/d	3000 – 6000IU/d

- **Pharmacologic Treatment Options**

Drug	Strength	AWP Unit Price	30-day Supply
Deficiency			
Vitamin D₂ (Ergocalciferol)	50000 IU	\$ 0.20	\$ 0.80
Vitamin D₃ (Cholecalciferol)	50000 IU	\$ 0.15	\$ 0.60
Maintenance			
Vitamin D₂ (Ergocalciferol)	400 IU	\$ 0.02	\$ 1.20
Vitamin D₃ (Cholecalciferol)	400 IU	\$ 0.02	\$ 1.20

*Pricing based on lowest AWP Unit Price for specified strength of generic drug

References:

1. Holick M, Binkley N, Bischoff-Ferrari H, et al. Evaluation, Treatment, and Prevention of Vitamin D Deficiency: an Endocrine Society Clinical Practice Guideline. J Clin Endocrinol Metab 2011;96(7):1911-1930.
2. Dawson-Hughes, B. Vitamin D deficiency in adults: Definition, clinical manifestations, and treatment. In: UpToDate, Post, TW (Ed), UpToDate, Waltham, MA. (accessed 2016 Jan 27).
3. Holick M. Vitamin D Deficiency. N Engl J Med 2007;357:266-281.
4. Red Book Online. Micromedex. www.micromedexsolutions.com (accessed 2016 Jan 30).