

MEDICAL POLICY

MEDICAL POLICY DETAILS	
Medical Policy Title	Screening for Vitamin D Deficiency
Policy Number	2.02.45
Category	Technology Assessment
Original Effective Date	08/21/14
Committee Approval Date	04/16/15, 06/16/16, 07/20/17, 07/19/18, 07/18/19, 08/20/20, 08/19/21
Current Effective Date	08/17/23
Archived Date	08/19/21
Archived Review Date	08/18/22, 08/17/23
Product Disclaimer	<ul style="list-style-type: none"> • If a product excludes coverage for a service, it is not covered, and medical policy criteria do not apply. • If a commercial product (including an Essential Plan or Child Health Plus product), medical policy criteria apply to the benefit. • If a Medicaid product covers a specific service, and there are no New York State Medicaid guidelines (eMedNY) criteria, medical policy criteria apply to the benefit. • If a Medicare product (including Medicare HMO-Dual Special Needs Program (DSNP) product) covers a specific service, and there is no national or local Medicare coverage decision for the service, medical policy criteria apply to the benefit. • If a Medicare HMO-Dual Special Needs Program (DSNP) product DOES NOT cover a specific service, please refer to the Medicaid Product coverage line.

POLICY STATEMENT

- I. Based upon our criteria and assessment of the peer-reviewed literature, screening for vitamin D deficiency in individuals considered high risk for vitamin D deficiency (*See Policy Guideline I*) is considered **medically appropriate**.
- II. Based upon our criteria and assessment of the peer-reviewed literature, *routine* screening for vitamin D deficiency in healthy adults or children is considered **not medically necessary**.
- III. Based upon our criteria and assessment of the peer-reviewed literature, screening for vitamin D deficiency in individuals with non-skeletal diseases (e.g., cardiovascular disease, cancer, and autoimmune disease) is considered **not medically necessary**.

Refer to Corporate Medical Policy #11.01.15 Medically Necessary Services

POLICY GUIDELINES

- I. Individuals who are high risk for vitamin D deficiency include, but are not limited to those with the following conditions:
 - A. Osteomalacia;
 - B. Osteoporosis;
 - C. Chronic kidney disease;
 - D. Hepatic failure;
 - E. Malabsorption syndromes (e.g., cystic fibrosis, inflammatory bowel disease, Crohn's disease, bariatric surgery, radiation enteritis);
 - F. Hyperparathyroidism;
 - G. Medications (e.g., antiseizure, glucocorticoids, AIDS medications, antifungals, cholestyramine);
 - H. African-American and Hispanic children and adults;
 - I. Pregnant and lactating women;

Medical Policy: SCREENING FOR VITAMIN D DEFICIENCY

Policy Number: 2.02.45

Page: 2 of 6

- J. Older adults (age greater than 65 years) with history of falls or nontraumatic fractures;
 - K. Obese children and adults (BMI greater than 30 kg/m²);
 - L. Granuloma-forming disorders (e.g., sarcoidosis, tuberculosis, histoplasmosis, coccidiomycosis, berylliosis); and
 - M. Some lymphomas.
- II. Serum concentration of 25 hydroxyvitamin D (25(OH)D) is the optimal clinical indicator of vitamin D metabolism due to the rapid conversion of vitamin D to 25(OH)D with only a small fraction converted to 1,25 hydroxyvitamin D (1,25 OHD).

DESCRIPTION

A major source of vitamin D for most humans comes from exposure of the skin to sunlight typically between 1000 hours and 1500 hours in the spring, summer, and fall. Vitamin D produced in the skin may last at least twice as long in the blood compared with ingested vitamin D. A variety of factors reduce the skin's production of vitamin D₃, including increased skin pigmentation, aging, and the topical application of a sunscreen. An alteration in the zenith angle of the sun caused by a change in latitude, season of the year, or time of day dramatically influences the skin's production of vitamin D₃. Few foods naturally contain vitamin D₂ or vitamin D₃; however, some foods have been fortified with Vitamin D.

Vitamin D deficiency results in abnormalities in calcium and phosphorus and bone metabolism. Specifically, vitamin D deficiency causes a decrease in the efficiency of intestinal calcium and phosphorus absorption of dietary calcium and phosphorus, resulting in an increase in parathyroid hormone (PTH) levels. Secondary hyperparathyroidism maintains serum calcium in the normal range at the expense of mobilizing calcium from the skeleton and increasing phosphorus wasting in the kidneys. As a result there may be bone weakness and a generalized decrease in bone mineral density (BMD), resulting in osteopenia and osteoporosis. Vitamin D deficiency may also cause muscle weakness making standing and walking difficult for affected children. In the elderly, more frequent falls may occur, which increases their risk of fracture.

RATIONALE

The Endocrine Society Task Force for Evaluation, Treatment and Prevention of Vitamin D deficiency (2011) recommended screening for vitamin D deficiency in individuals at risk for deficiency. The Task Force did not recommend population screening for vitamin D deficiency in individuals who are not at risk (high quality evidence). High risk for vitamin D deficiency include those individuals with osteoporosis, chronic kidney failure, malabsorption syndromes, hyperparathyroidism, African-American and Hispanic children and adults, pregnant or lactating women, older adults with history of falls or non-traumatic fractures, obese children or adults (BMI greater than 30 kg/m²), granuloma-forming disorders, and some lymphomas.

The Agency for Healthcare Research and Quality (AHRQ) Report on Vitamin D and Calcium: a Systematic Review of Health Outcomes (2009) updated in 2014, found that no qualified systematic reviews had evaluated the association between vitamin D intake or serum 25(OH)D concentrations and incidence of cardiovascular disease, body weight in adults, total cancer incidence and mortality, immune function-related outcomes, or pregnancy. There is fair evidence between low serum 25(OH)D levels and rickets. However, no threshold level has been identified below which rickets will not occur. The association between low serum 25(OH)D levels and the risk of falls, fractures or performance measures among postmenopausal women or elderly men is inconsistent. There is fair evidence to support an association between serum 25(OH)D and bone mineral density (BMD) or changes in BMD at the femoral neck in postmenopausal women and elderly men. However, more recent studies show no significant effects of vitamin D supplementation on BMD in children or adults. In its 2014 updated report, the AHRQ found solid agreement with the findings of the original report, i.e., that the majority of the findings concerning vitamin D, alone or in combination with calcium, on the health outcomes of interest were inconsistent. Associations observed in prospective cohort and nested case-control studies were inconsistent, or when consistent, were rarely supported by the results of randomized, controlled trials. Although a large number of new studies (and longer followup to older studies) were identified, particularly for cardiovascular outcomes, all-cause mortality, several types of cancer, and intermediate outcomes for bone health, no firm conclusions could be drawn. Studies identified for the 2014 report suggested a possible U-shaped association between serum 25(OH)D concentrations and both all-cause mortality and hypertension, and also suggested that the level of supplemental vitamin D and calcium

Medical Policy: SCREENING FOR VITAMIN D DEFICIENCY

Policy Number: 2.02.45

Page: 3 of 6

administered in the Women's Health Initiative Calcium-Vitamin D Trial were not associated with an increased risk for cardiovascular disease or cancer among postmenopausal women who were not taking additional supplemental vitamin D and calcium. Studies suggested that the method used to assay 25(OH)D may influence the outcomes of dose-response assessments. The reports found that, beyond these observations, it was difficult to make any substantive statements, on the basis of the available evidence, concerning the association of either serum 25(OH)D concentration, vitamin D supplementation, calcium intake, or the combination of both nutrients, with the various health outcomes, because most of the findings were inconsistent.

The Agency for Healthcare Research and Quality (AHRQ) Screening for Vitamin D Deficiency in Adults: An Evidence Review for the U.S. Preventive Services Task Force (USPSTF), Evidence Synthesis 201 (April 2021), concluded that no studies have evaluated the direct benefit or harms of screening for vitamin D deficiency. Among asymptomatic, community-dwelling populations with low vitamin D levels, the evidence suggests that treatment with vitamin D (with or without calcium) has no effect on mortality or the incidence of fractures, falls, depression, diabetes, cardiovascular disease, cancer, or adverse events. The evidence is inconclusive about the impact of treatment on physical functioning and infection.

The Institute of Medicine (IOM) Committee to Review Dietary Reference Intakes for Vitamin D and Calcium assessed the health outcomes associated with vitamin D and calcium (2010). The Committee found that the evidence supported a role for these nutrients in bone health but not in the treatment of other health conditions. In addition, the Committee assigned an upper level to both vitamin D and calcium intake noting that, beyond those levels, the risk of harm increases. Too much calcium has been associated with kidney stone formation, while very high levels of vitamin D are known to cause kidney and tissue damage.

The Institute for Clinical Systems Improvement (ICSI) Health Care Guidelines; Preventative Services for Adults (2013) recommendation stated there is insufficient evidence to assess the balance of benefits and harms of counseling adults to get an adequate intake of vitamin D and calcium in order to prevent either cancer or bone fractures (*Weak Recommendation*). The evidence for effectiveness supports that adequate calcium intake from food sources and supplements promote bone health; however, the evidence is insufficient to recommend counseling for non-institutionalized, community-dwelling, asymptomatic adults without previous history of fractures or cancer. However, vitamin D supplementation does appear to be effective in preventing injury from falls in community-dwelling adults aged 65 years and over who are at increased risk for falls.

The USPSTF guidelines for Vitamin D, Calcium, or Combined Supplementation for the Primary Prevention of Fractures in Community-Dwelling Adults as updated in April 2018, concluded that the current evidence is insufficient to assess the balance of the benefits and harms of vitamin D and calcium supplementation, alone or combined, for the primary prevention of fractures in men and pre-menopausal women (Grade: I Recommendation). The current evidence is also insufficient to assess the balance of the benefits and harms of daily supplementation with doses greater than 400 IU of vitamin D and greater than 1000 mg of calcium for the primary prevention of fractures in community-dwelling, postmenopausal women (Grade: I Recommendation). The USPSTF recommends against daily supplementation with 400 IU or less of vitamin D and 1000 mg or less of calcium for the primary prevention of fractures in community-dwelling, postmenopausal women Grade: D Recommendation).

The USPSTF guidelines for Screening for Vitamin D Deficiency in Adults: U.S. Preventive Services Task Force Recommendation Statement updated in 2021, found 1) no direct evidence on the benefits of screening for vitamin D deficiency, 2) adequate evidence that treatment of asymptomatic vitamin D deficiency has no benefit on mortality, risk for fractures in persons selected solely on the basis of low vitamin D levels (as opposed to clinical risks such as low bone density), or incidence of type 2 diabetes mellitus, 3) inadequate evidence on the benefit of treatment of asymptomatic vitamin D deficiency on other outcomes, including falls, cancer, cardiovascular events, depression, infection, or physical function, 4) despite adequate evidence to conclude no benefit for a few health outcomes, evidence on the benefits of treatment of asymptomatic vitamin D deficiency in adults for other health outcomes remains inadequate, 5) the overall evidence on the benefits of treatment of asymptomatic vitamin D deficiency in adults is inadequate. There is no direct evidence on the harms of screening for vitamin D deficiency and there is adequate evidence that the harms of treatment of vitamin D deficiency are small to none. The overall evidence on the benefits of screening for vitamin D deficiency is

Medical Policy: SCREENING FOR VITAMIN D DEFICIENCY**Policy Number: 2.02.45****Page: 4 of 6**

lacking. Therefore, the balance of benefits and harms of screening for vitamin D deficiency in asymptomatic adults cannot be determined.

CODES

- Eligibility for reimbursement is based upon the benefits set forth in the member's subscriber contract.
- **CODES MAY NOT BE COVERED UNDER ALL CIRCUMSTANCES. PLEASE READ THE POLICY AND GUIDELINES STATEMENTS CAREFULLY.**
- Codes may not be all inclusive as the AMA and CMS code updates may occur more frequently than policy updates.
- Code Key: Experimental/Investigational = (E/I), Not medically necessary/ appropriate = (NMN).

CPT Codes

Code	Description
82306	Vitamin D; 25 hydroxy, includes fraction(s), if performed
82652	Vitamin D; 1, 25 dihydroxy, includes fraction(s), if performed
0038U	Vitamin D, 25 hydroxy D2 and D3, by LC-MS/MS, serum microsample, quantitative (e.g., Sensieva™ Droplet 25OH Vitamin D2/D3 Microvolume LC/MS Assay)

Copyright © 2023 American Medical Association, Chicago, IL

HCPCS Codes

Code	Description
No specific code(s)	

ICD10 Codes

Code	Description
E20.0	Idiopathic hypoparathyroidism
E20.8	Other hypoparathyroidism
E20.9	Hypoparathyroidism, unspecified
E21.0 -E21.3	Hyperparathyroidism and other disorders of parathyroid gland (code range)
E55.0	Rickets, active
E55.9	Vitamin D deficiency, unspecified
E83.3-83.39	Disorders of phosphorus metabolism (code range)
E83.51	Hypocalcemia
E83.52	Hypercalcemia
M81.0	Age-related osteoporosis without current pathological fracture
M81.6	Localized osteoporosis [Lequesne]
M81.8	Other osteoporosis without current pathological fracture
M83.0-M83.9	Adult osteomalacia (code range)
M85.9	Disorder of bone density and structure, unspecified
N18.3-N18.6	Chronic kidney disease, Stage III to End stage renal disease (code range)

Medical Policy: SCREENING FOR VITAMIN D DEFICIENCY

Policy Number: 2.02.45

Page: 5 of 6

Code	Description
N25.81	Secondary hyperparathyroidism of renal origin

REFERENCES

- Agency for Healthcare Research and Quality. Vitamin D and Calcium: A Systematic Review of Health Outcomes (Update). 2014 Sep 15 [<https://effectivehealthcare.ahrq.gov/topics/vitamin-d-calcium/research>] accessed 06/23/23.
- Charoengam N, et al. Vitamin D for Skeletal and Non-Skeletal Health: What We Should Know. *J Clin Orthop Trauma* Nov-Dec 2019;10(6):1082-1093.
- Chiba A, et al. serum vitamin D levels affect pathologic complete response in patients undergoing neoadjuvant systemic therapy for operable breast cancer. *Clin Breast Cancer* 2018 Apr;18(2):144-149.
- *Chung M, et al. Vitamin D and calcium: a systematic review of health outcomes. Evidence Reports/Technology Assessments. No. 183. Rockville, MD: Agency for Healthcare Research and Quality; 2009 Aug. AHRQ Publication No. 09-E015 [<http://www.ncbi.nlm.nih.gov/books/NBK32603/>] accessed 06/23/23.
- Durá-Travé T, et al. Assessment of vitamin D status and parathyroid hormone during a combined intervention for the treatment of childhood obesity. *Nutr Diabetes* 2018 Jun 4;9(1):18.
- *Elamin MB, et al. Vitamin D and cardiovascular outcomes: a systematic review and meta-analysis. *J Clin Endocrinol Metab* 2011 Jul; 96(7):1931-42.
- Elshorbagy HH, et al. Impact of vitamin D supplementation on attention-deficit hyperactivity disorder in children. *Ann Pharmacother* 2018 Jul;52(7):623-631.
- Funderburk L, et al. Serum vitamin D and body composition in adults undergoing fitness assessments: a correlation study. *PLoS One* 2018 Jun 1;13(6):e0197903.
- *Glendenning P, et al. Screening for vitamin D deficiency: defining vitamin D deficiency, target thresholds of treatment and estimating the benefits of treatment. *Pathology* 2012 Feb;44(2):160-5.
- *Holik MF, et al. Evaluation, treatment, and prevention of vitamin D deficiency: an Endocrine Society clinical practice guideline. *J Clin Endocrinol Metab* 2011 Jul;96(7):1911-30.
- *Institute of Medicine (US) Committee to Review Dietary Reference Intakes for Vitamin D and Calcium; Ross AC, et al, editors. *Dietary Reference Intakes for Calcium and Vitamin D* Washington (DC): National Academies Press (US); 2011.
- Kahwati LC, et al. Screening for Vitamin D Deficiency in Adults: An Evidence Review for the U.S. Preventive Services Task Force. Evidence Synthesis No. 201. *AHRQ Publication No. 20-05270-EF-1* Rockville, MD: Agency for Healthcare Research and Quality; 2021.
- Kowalówka M, et al. Clinical Significance of Analysis of Vitamin D Status in Various Diseases. *Nutrients* 2020 Sep 11;12(9):2788.
- Langlois PL, et al. Vitamin D supplementation in the critically ill: a systematic review and meta-analysis. *Clin Nutr* 2018 Aug;37(4):1238-1246.
- *Le Blanc ES, et al. Screening for vitamin D deficiency: a systematic review for the U.S. Preventative Services Task Force. *Ann Intern Med* 2015;162(2):109-22.
- *LeFevre ML, et al. U.S. Preventive Services Task Force. Screening for Vitamin D deficiency in adults: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med* 2015;162(2):133-40.
- Morgan DJ, et al. 2018 update on medical overuse. *JAMA Intern Med* 2019 Feb 1;179(2):240-246.
- Rockwell M, et al. Clinical management of low vitamin D: a scoping review of physicians' practices. *Nutrients* 2018 Apr 16;10(4):pii:E493.

Medical Policy: SCREENING FOR VITAMIN D DEFICIENCY

Policy Number: 2.02.45

Page: 6 of 6

US Preventative Services Task Force, Grossman, et al. Vitamin D, calcium, or combined supplementation for the primary prevention of fractures in community-dwelling adults. US Preventative Services Task Force Recommendation Statement. JAMA 2018 Apr 17;319(15):1592-1599.

US Preventative Services Task Force Recommendation Statement: screening for Vitamin D deficiency in adults. JAMA 2021;325(14):1436-1442.

US Preventive Services Task Force for Vitamin D: Screening. 2021 Apr 13.

[<http://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/vitamin-d-deficiency-screening>] accessed 06/23/23.

Yao P, et al. Vitamin D and calcium for the prevention of fracture: A systematic review and meta-analysis. JAMA Netw Open 2019 Dec 2;2(12):e1917789.

*Key Article

KEY WORDS

Vitamin D, 25(OH)D

CMS COVERAGE FOR MEDICARE PRODUCT MEMBERS

There is currently a Local Coverage Determination (LCD#L37535) for Vitamin D Assay Testing. Please refer to the following LCD website for Medicare Members: [https://www.cms.gov/medicare-coverage-database/view/lcd.aspx?lcdid=37535&ver=18&CntrctrSelected=298*1&Cntrctr=298&s=41&DocType=Active&bc=AAgAAAQAgAAA&=] accessed 09/05/23.