Vitamin D screening

Clinical Policy ID: CCP.1414

Recent review date: 2/2026

Next review date: 6/2027

Policy contains: Vitamin D assay testing, Vitamin D screening, Vitamin D supplementation.

AmeriHealth Caritas has developed clinical policies to assist with making coverage determinations. AmeriHealth Caritas' clinical policies are based on guidelines from established industry sources, such as the Centers for Medicare & Medicaid Services (CMS), state regulatory agencies, the American Medical Association (AMA), medical specialty professional societies, and peer-reviewed professional literature. These clinical policies along with other sources, such as plan benefits and state and federal laws and regulatory requirements, including any state- or plan-specific definition of "medically necessary," and the specific facts of the particular situation are considered, on a case by case basis, by AmeriHealth Caritas when making coverage determinations. In the event of conflict between this clinical policy and plan benefits and/or state or federal laws and/or regulatory requirements, the plan benefits and/or state and federal laws and/or regulatory requirements shall control. AmeriHealth Caritas' clinical policies are for informational purposes only and not intended as medical advice or to direct treatment. Physicians and other health care providers are solely responsible for the treatment decisions for their patients. AmeriHealth Caritas' clinical policies are reflective of evidence-based medicine at the time of review. As medical science evolves, AmeriHealth Caritas will update its clinical policies as necessary. AmeriHealth Caritas' clinical policies are not guarantees of payment.

Coverage policy

Routine 25-hydroxyvitamin D assay testing or preventive screening is investigational/not clinically proven, and therefore, not medically necessary to guide decision-making or dosing in members ages 19 or older who do not have established indications for 25-hydroxyvitamin D testing, including those who are pregnant, have dark complexion, or are obese. Empiric vitamin D supplementation without testing is recommended for specific populations (children, pregnant women, adults 75 years and older, and adults with high-risk prediabetes), provided that vitamin D dosages are within tolerable upper intake levels established by the Institute of Medicine (2011) (Endocrine Society [Demay, 2024]).

Annual screening for vitamin D deficiency is investigational/not clinically proven and, therefore, not medically necessary in pediatric members who are not at risk for vitamin D deficiency (American Academy of Pediatrics, 2021).

Annual screening for vitamin D deficiency using the 25-hydroxyvitamin D assay is clinically proven and, therefore, may be medically necessary for members who exhibit any sign or symptom of vitamin D deficiency or for asymptomatic members who are at increased risk for vitamin D deficiency, defined as having one or more of the following conditions, when results will be used to institute more aggressive therapy (American Academy of Pediatrics, 2021; American College of Obstetricians and Gynecologists, 2024; Holick, 2011):

- Chronic kidney disease stage III or greater.

- Cirrhosis/chronic liver failure.
- Hypercalcemia.
- Hypercalciuria.
- Hypervitaminosis D.
- Hypocalcemia.
- Long-term use of medications known to lower vitamin D levels (e.g., antiseizure drugs, antifungals, glucocorticosteroids, cholestyramine, and drugs for acquired immunodeficiency syndrome/human immunodeficiency virus).
- Malabsorption states.
- Obstructive jaundice.
- Osteomalacia.
- Osteoporosis if either:
    - T score on dual energy x-ray absorptiometry scan < -2.5.
    - History of fragility fractures.
    - Fracture risk assessment tool > 3% 10-year probability of hip fracture or 20% 10-year probability of other major osteoporotic fracture.
    - Fracture risk assessment tool > 3% (any fracture) with T-score < -1.5.
- Initiating bisphosphonate therapy (Vitamin D level and serum calcium levels should be determined and managed as necessary before bisphosphonate is initiated).
- Osteosclerosis/osteopetrosis.
- Parathyroid disorders.
- Rickets.
- Vitamin D deficiency on replacement therapy related to a condition listed above; to monitor the efficacy of treatment.

The serum 1,25 dihydroxyvitamin D assay is clinically proven and, therefore, may be medically necessary for monitoring certain acquired and inherited disorders of vitamin D and phosphate metabolism, including but not limited to (Holick, 2011):

- Unexplained hypercalcemia (suspected granulomatous disease or lymphoma).
- Unexplained hypercalciuria (suspected granulomatous disease or lymphoma).
- Suspected genetic childhood rickets.
- Suspected tumor-induced osteomalacia.
- Nephrolithiasis or hypercalciuria.

Limitations

Performing both assays of vitamin D (25-hydroxyvitamin D and 1,25-dihydroxyvitamin D) is investigational/not clinically proven and, therefore, not medically necessary for each of the above conditions.

Once a member has been shown to be vitamin D deficient, further testing may be medically necessary only to ensure adequate replacement has been accomplished. Thereafter, annual testing may be medically necessary depending on the indication and other mitigating factors.

Alternative covered services

No alternative covered services were identified during the writing of this policy.

Background

Vitamin D is a fat-soluble vitamin ingested through foods, sun exposure, and supplements. It promotes calcium absorption and normal growth of bone. Without adequate levels of vitamin D, bone can become thin, brittle, or misshapen. In addition, the vitamin helps modulate cell growth, enhance neuromuscular and immune function, and reduce inflammation. Vitamin D deficiency can lead to rickets in children and osteomalacia/osteoporosis in adults (National Institutes of Health, 2025).

The Institute of Medicine (2011) established Dietary Reference Intakes for vitamin D, which vary by age. Persons older than 70 years require 800 international units a day, while infants under age one require just 400 international units a day; persons between ages one and 70 years require 600 international units a day. Foods with the most vitamin D include cod liver oil, certain fishes (sockeye salmon, swordfish, and tuna), orange juice, milk, and yogurt (National Institutes of Health, 2025).

Vitamin D status varies in the U.S. population. While most people have serum 25-hydroxyvitamin D levels considered sufficient, yet some are at risk of inadequacy (levels 12 to 19.6 nanograms per milliliter), and 5% are at risk of deficiency (levels below 12 nanograms per milliliter). Breastfed infants, older adults, and people with darker pigmented skin, limited sun exposure, conditions that limit fat absorption, obesity, or a history of gastric bypass surgery are at higher risk of vitamin D inadequacy. Vitamin D supplements may be needed to meet daily requirements and prevent adverse health effects (National Institutes of Health, 2025).

An Institute of Medicine expert panel found vitamin D supplements beneficial for bone, but not for extra-skeletal health. The panel added that any daily supplement > 4,000 international units may lead to possible harm, e.g., hypercalcemia and soft tissue or vascular calcification (Institute of Medicine, 2011).

In the United States from 1999 to 2014, the proportion of adults taking vitamin D supplements has increased. Those taking at least 4,000 units per day rose from 0.2% to 3.2% during this time, which raised concern over potential health risks (Rooney, 2017). Vitamin D testing also increased substantially in the general population, rising from 0.29 per 1,000 person-years at risk in 2005 to 16.1 per 1,000 person-years at risk by 2015, prompting a discussion about when this testing is medically necessary (Demay, 2024).

The main indicator of vitamin D status is serum concentration of 25-hydroxyvitamin D. In contrast, circulating 1,25 dihydroxyvitamin D assay is not considered a good indicator of vitamin D status because of its short half-life and influence by parathyroid hormone, calcium, and phosphate. Circulating 1,25 dihydroxyvitamin D levels do not typically decrease until vitamin D deficiency is severe (National Institutes of Health, 2025).

Findings

The body of evidence on vitamin D screening and supplementation has evolved substantially since the first clinical practice guidelines were published in 2011. Early recommendations favoring screening in at-risk populations were based primarily on observational studies linking low serum 25-hydroxyvitamin D levels to chronic disease risk. However, no randomized controlled trials have directly evaluated screening-based strategies (as opposed to treatment trials) in generally healthy populations (Shah, 2024; Kahwati, 2021). Current guidelines from major medical societies converge on recommending against routine vitamin D screening in healthy adults, while supporting targeted testing in individuals with specific clinical indications. The evidence supports empiric supplementation without testing for select populations, including children, older adults, pregnant women, and those with high-risk prediabetes.

Guidelines

The Endocrine Society has issued two clinical practice guidelines addressing vitamin D screening and supplementation. The 2011 guideline recommended 25-hydroxyvitamin D screening for individuals with risk factors and in whom a swift response to optimization of vitamin D status could be expected. That guideline also recommended using the serum 1,25-dihydroxyvitamin D assay only for monitoring certain conditions, such as acquired and inherited disorders of vitamin D and phosphate metabolism (Holick, 2011).

In 2024, the Endocrine Society Guideline Development Panel issued updated recommendations that represent a significant departure from the 2011 guidance. Based on very low- to low-certainty evidence, the Panel recommended against routine 25-hydroxyvitamin D testing in healthy adults ages 19 and older, during pregnancy, and in adults with dark complexion or obesity. The Panel further recommended against routine screening for 25-hydroxyvitamin D levels to guide decision-making about whether to initiate vitamin D supplementation and against routine follow-up testing to guide vitamin D dosing in these populations (Demay, 2024).

The 2024 Endocrine Society guideline also addressed threshold values for vitamin D status. The Panel did not find clinical trial evidence that would support establishing distinct 25-hydroxyvitamin D thresholds tied to outcome-specific benefits in the populations examined. As a result, the Endocrine Society no longer endorses the target 25-hydroxyvitamin D level of 30 nanograms per milliliter (75 nanomoles per liter) suggested in the 2011 guideline, and no longer endorses specific 25-hydroxyvitamin D levels to define vitamin D sufficiency, insufficiency, and deficiency. In populations where empiric vitamin D supplementation is recommended, supplementation should generally proceed without baseline testing or subsequent monitoring, provided that vitamin D dosages remain within established tolerable upper intake levels (Demay, 2024).

The U.S. Preventive Services Task Force issued an updated recommendation statement in 2021 finding insufficient evidence to support vitamin D screening in community-dwelling, nonpregnant adults who have no signs or symptoms of vitamin D deficiency or conditions for which vitamin D treatment is recommended. This recommendation does not apply to persons who are hospitalized or living in institutions such as nursing homes.

The Task Force noted that little to no ultraviolet B exposure, older age, obesity, and being non-Hispanic Black are commonly reported risk factors for low vitamin D levels (Krist, 2021).

The Choosing Wisely campaign has issued recommendations from multiple medical societies regarding vitamin D testing. For pediatric populations, the American Academy of Pediatrics recommends against ordering vitamin D concentrations routinely in otherwise healthy children, including children who are overweight or obese. Testing should be reserved for children with evidence of low bone mass, such as rickets or a history of repeated low-

trauma bone fractures. For children with insufficient dietary intake or obesity, vitamin D supplements represent an alternative to routine testing (American Academy of Pediatrics, 2021).

For adult populations, the Endocrine Society recommends testing higher-risk patients when results will be used to institute more aggressive therapy, such as those with osteoporosis, chronic kidney disease, malabsorption syndromes, or certain infections. For most otherwise healthy patients, over-the-counter vitamin D supplements and increased summer sun exposure are sufficient without testing (Holick, 2011). Additionally, the Endocrine Society recommends against routinely measuring 1,25-dihydroxyvitamin D unless the patient has hypercalcemia or decreased kidney function (Holick, 2011).

The American College of Obstetricians and Gynecologists has addressed vitamin D screening in the context of pregnancy. The College stated that testing for maternal serum 25-hydroxyvitamin D levels may be considered in pregnant women believed to be at elevated risk of deficiency and recommended 1,000 to 2,000 international units per day of vitamin D for those found to be deficient. However, the College did not recommend universal screening of all pregnant women. This recommendation was reaffirmed in 2024 (American College of Obstetricians and Gynecologists, 2024).

Systematic Reviews

Two systematic reviews have directly informed current guideline recommendations on vitamin D screening and supplementation. The systematic review conducted by Kahwati and colleagues to support the U.S. Preventive Services Task Force update found no studies that directly evaluated the benefits and harms of screening for vitamin D deficiency in asymptomatic adults. The available evidence enrolled participants at risk for deficiency based on low serum vitamin D levels using various assays that may not have been standardized according to current testing standards (Kahwati, 2021).

Shah and colleagues conducted a systematic review of 151 studies to support the 2024 Endocrine Society guideline. The investigators examined whether screening with a serum 25-hydroxyvitamin D test, with vitamin D supplementation or treatment only if results fall below a threshold, versus no screening improves outcomes in healthy adults, adults with dark complexion, and adults with obesity. No studies evaluating an actual screening strategy with serum 25-hydroxyvitamin D were identified for any of these populations (Shah, 2024).

Meta-Analyses

The systematic review by Shah and colleagues included meta-analyses examining the effects of vitamin D supplementation on specific outcomes in select populations. For children and adolescents ages 1 through 18 years, the meta-analyses included 12 randomized trials with 12,951 participants examining per-person risk of respiratory tract infection and 3 trials with 428 participants examining incidence rates. The evidence suggests potential benefits of empiric vitamin D supplementation in this population for preventing nutritional rickets and potentially reducing respiratory tract infections (Shah, 2024).

For adults 75 years and older, 25 randomized trials with 49,879 participants contributed to the mortality meta-analysis. The pooled analyses suggest a small reduction in mortality with vitamin D supplementation in this age group. For pregnant women, 10 randomized trials with 2,928 participants examined multiple maternal and neonatal outcomes including preeclampsia, gestational hypertension, intrauterine mortality, neonatal mortality, preterm birth, and small-for-gestational-age birth. Point estimates were directionally consistent with benefit, though confidence intervals were wide. For adults with prediabetes, 10 randomized trials with 4,060 participants

contributed to the incident diabetes meta-analysis, suggesting that vitamin D supplementation may reduce progression to diabetes when combined with lifestyle modification (Shah, 2024).

The U.S. Preventive Services Task Force evidence review found sufficient 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. There was insufficient evidence on the benefit of treatment for other outcomes, including falls, cancer, cardiovascular events, depression, infection, or physical functioning. The review found sufficient evidence that the harms of treatment of vitamin D deficiency are small to none (Krist, 2021).

In 2026, we reorganized the findings section. No new documents added and no policy changes warranted.

References

On January 4, 2026, we searched PubMed and the databases of the Cochrane Library, the U.K. National Health Services Centre for Reviews and Dissemination, the Agency for Healthcare Research and Quality, and the Centers for Medicare & Medicaid Services. Search terms were "vitamin d deficiency/diagnosis (MeSH)," "vitamin d deficiency/analysis (MeSH)," and "vitamin D screening." We included the best available evidence according to established evidence hierarchies (typically systematic reviews, meta-analyses, and full economic analyses, where available) and professional guidelines based on such evidence and clinical expertise.

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Policy updates

3/2019: initial review date and clinical policy effective date: 6/2019

5/2020: Policy references updated.

7/2021: Policy references updated.

7/2022: Policy references updated.

2/2023: Policy references updated.

2/2024: Policy references updated.

2/2025: Policy references updated. Coverage modified.

2/2026: Policy references updated.

Related Codes

Below are the most commonly submitted codes for the service(s)/item(s) subject to this policy CCP.1414. This is not an exhaustive list of codes. Providers are expected to consult the appropriate coding manuals and bill accordingly.

Code	Code Description
82306	Vitamin D; 25 hydroxy, includes fraction(s), if performed
82652	Vitamin D; 1, 25 dihydroxy, includes fraction(s), if performed