Medical Coverage Policy

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Vitamin D Testing

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INSTRUCTIONS FOR USE

The following Coverage Policy applies to health benefit plans administered by Cigna Companies. Certain Cigna Companies and/or lines of business only provide utilization review services to clients and do not make coverage determinations. References to standard benefit plan language and coverage determinations do not apply to those clients. Coverage Policies are intended to provide guidance in interpreting certain standard benefit plans administered by Cigna Companies. Please note, the terms of a customer's particular benefit plan document [Group Service Agreement, Evidence of Coverage, Certificate of Coverage, Summary Plan Description (SPD) or similar plan document] may differ significantly from the standard benefit plans upon which these Coverage Policies are based. For example, a customer's benefit plan document may contain a specific exclusion related to a topic addressed in a Coverage Policy. In the event of a conflict, a customer's benefit plan document always supersedes the information in the Coverage Policies. In the absence of a controlling federal or state coverage mandate, benefits are ultimately determined by the terms of the applicable benefit plan document. Coverage determinations in each specific instance require consideration of 1) the terms of the applicable benefit plan document in effect on the date of service; 2) any applicable laws/regulations; 3) any relevant collateral source materials including Coverage Policies and; 4) the specific facts of the particular situation. Each coverage request should be reviewed on its own merits. Medical directors are expected to exercise clinical judgment where appropriate and have discretion in making individual coverage determinations. Where coverage for care or services does not depend on specific circumstances, reimbursement will only be provided if a requested service(s) is submitted in accordance with the relevant criteria outlined in the applicable Coverage Policy, including covered diagnosis and/or procedure code(s). Reimbursement is not allowed for services when billed for conditions or diagnoses that are not covered under this Coverage Policy (see "Coding Information" below). When billing, providers must use the most appropriate codes as of the effective date of the submission. Claims submitted for services that are not accompanied by covered code(s) under the applicable Coverage Policy will be denied as not covered. Coverage Policies relate exclusively to the administration of health benefit plans. Coverage Policies are not recommendations for treatment and should never be used

as treatment guidelines. In certain markets, delegated vendor guidelines may be used to support medical necessity and other coverage determinations.

Overview

This Coverage Policy addresses the medical necessity of initial and repeat serum vitamin D testing.

Coverage Policy

Total serum vitamin D testing (Serum 25(OH)D, CPT® 82306 or CPT® 0038U) is considered medically necessary for an individual with ANY of the following:

- A condition or medical diagnosis associated with vitamin D deficiency:
  - Rickets
  - Osteomalacia
  - Osteoporosis
  - Chronic kidney disease
  - Hepatic failure
  - Exocrine pancreatic insufficiency
  - Chronic pancreatitis
  - Malabsorption syndromes (e.g., cystic fibrosis, inflammatory bowel disease, Crohn's disease, bariatric surgery, radiation enteritis)
  - Hyperparathyroidism
  - Medications (e.g., antiseizure medications, glucocorticoids, AIDS/HIV medications, antifungals [e.g., ketoconazole], cholestyramine)
  - History of nontraumatic fractures
  - Granuloma-forming disorders (e.g., sarcoidosis, tuberculosis, histoplasmosis, coccidiomycosis, berylliosis)
  - Lymphomas
  - Genetic syndromes (e.g., osteogenesis imperfecta, idiopathic juvenile osteoporosis, Turner syndrome, x-linked hypophosphatemia, myotonic dystrophy type 2)
- Age ≤ 18 years
- Age > 64 years
- previously documented vitamin D deficiency
- known or suspected excessive vitamin D blood levels (i.e., toxicity)

Active serum vitamin D testing (Serum 1,25(OH)2D, CPT® 82652) is considered medically necessary for an individual with ANY of the following:

- Chronic kidney disease
- Hereditary phosphate-losing disorders
- Oncogenic osteomalacia
- Pseudovitamin D-deficiency rickets
- Vitamin D-resistant rickets
- Granuloma-forming disorders (e.g., sarcoidosis, tuberculosis, histoplasmosis, coccidiomycosis, berylliosis, lymphomas, inflammatory bowel disease)

Vitamin D testing for any other indication, including screening in the general population, is not covered or reimbursable.

When criteria above are met, repeat vitamin D testing (CPT® 82306) every 3 months is medically necessary

Repeat vitamin D testing more frequently than this timeframe and for conditions other than those listed is not covered or reimbursable.

Vitamin D testing utilizing both CPT® 82306 and CPT® 82652 in combination is not covered or reimbursable.

Coding Information

Notes:

1. This list of codes may not be all-inclusive since the American Medical Association (AMA) and Centers for Medicare and Medicaid Services (CMS) code updates may occur more frequently than policy updates.
2. Deleted codes and codes which are not effective at the time the service is rendered may not be eligible for reimbursement.

Considered Medically Necessary when criteria in the applicable policy statements listed above are met:

CPT®* Codes	Description
82306	Vitamin D; 25 hydroxy, includes fraction(s), if performed
0038U	Vitamin D, 25 hydroxy D2 and D3, by LC-MS/MS, serum microsample, quantitative

ICD-10-CM Diagnosis Codes	Description
A15.0-A19.9	Tuberculosis
B38.0-B38.9	Coccidioidomycosis
B39.0-B39.9	Histoplasmosis
C22.0-C22.9	Malignant neoplasm of liver and intrahepatic bile ducts
C23	Malignant neoplasm of gallbladder
C24.0-C24.9	Malignant neoplasm of other and unspecified parts of biliary tract
C25.0-C25.9	Malignant neoplasm of pancreas
C81.00-C81.9A	Hodgkin lymphoma
C82.00-C82.9A	Follicular lymphoma
C83.00-C83.9A	Non-follicular lymphoma
C84.00-C84.ZA	Mature T/NK-cell lymphomas
C85.10-C85.9A	Other specified and unspecified types of non-Hodgkin lymphoma
C86.00-C86.61	Other specified types of T/NK-cell lymphoma
C88.00-C88.91	Malignant immunoproliferative diseases and certain other B-cell lymphomas

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ICD-10-CM Diagnosis Codes	Description
D13.0-D13.99	Benign neoplasm of other and ill-defined parts of digestive system
D86.0-D86.89	Sarcoidosis
E08.21-E08.22	Diabetes mellitus due to underlying condition with kidney complications
E09.22-E09.29	Drug or chemical induced diabetes mellitus with kidney complications
E10.21-E10.29	Type 1 diabetes mellitus with kidney complications
E11.00-E11.01	Type 2 diabetes mellitus with hyperosmolarity
E11.21-E11.22	Type 2 diabetes mellitus with kidney complications
E13.22-E13.29	Other specified diabetes mellitus with kidney complications
E21.0-E21.3	Hyperparathyroidism and other disorders of parathyroid gland
E41	Nutritional marasmus
E55.0-E55.9	Vitamin D deficiency
E64.3	Sequelae of rickets
E67.3	Hypervitaminosis D
E67.8	Other specified hyperalimentation
E68	Sequelae of hyperalimentation
E83.31-E83.32	Disorders of phosphorus metabolism and phosphatases
E84.0-E84.9	Cystic fibrosis
G71.11	Myotonic muscular dystrophy
I12.0-I12.9	Hypertensive chronic kidney disease
I13.0-I13.2	Hypertensive heart and chronic kidney disease
J63.2	Berylliosis
K50.00-K50.919	Crohn’s disease [regional enteritis]
K51.00-K51.919	Ulcerative colitis
K52.0	Gastroenteritis and colitis due to radiation
K70.31	Alcoholic cirrhosis of liver with ascites
K70.40-K70.41	Alcoholic hepatic failure
K72.00-K72.91	Hepatic failure, not elsewhere classified
K74.02	Hepatic fibrosis, advanced fibrosis
K86.0-K86.81	Other diseases of pancreas
K90.0	Celiac disease
K90.1	Tropical sprue
K90.2	Blind loop syndrome, not elsewhere classified
K90.41-K90.49	Other malabsorption due to intolerance

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ICD-10-CM Diagnosis Codes	Description
K90.89	Other intestinal malabsorption
K90.9	Intestinal malabsorption, unspecified
K91.2	Postsurgical malabsorption, not elsewhere classified
K91.82	Postprocedural hepatic failure
M05.00-M05.09	Felty's syndrome
M05.10-M05.19	Rheumatoid lung disease with rheumatoid arthritis
M05.20-M05.29	Rheumatoid vasculitis with rheumatoid arthritis
M05.30-M05.39	Rheumatoid heart disease with rheumatoid arthritis
M05.40-M05.49	Rheumatoid myopathy with rheumatoid arthritis
M05.50-M05.59	Rheumatoid polyneuropathy with rheumatoid arthritis
M05.60-M05.69	Rheumatoid arthritis with involvement of other organs and systems
M05.70-M05.79	Rheumatoid arthritis with rheumatoid factor without organ or systems involvement
M05.80-M05.89	Other rheumatoid arthritis with rheumatoid factor
M05.9	Rheumatoid arthritis with rheumatoid factor, unspecified
M05.A	Abnormal rheumatoid factor and anti-citrullinated protein antibody with rheumatoid arthritis
M06.00-M06.09	Rheumatoid arthritis without rheumatoid factor
M06.1	Adult-onset Still's disease
M06.20-M06.29	Rheumatoid bursitis
M06.30-M06.39	Rheumatoid nodule
M06.4	Inflammatory polyarthropathy
M06.80-M06.89	Other specified rheumatoid arthritis
M06.9	Rheumatoid arthritis, unspecified
M32.0-M32.9	Systemic lupus erythematosus (SLE)
M80.011A-M80.012S	Age-related osteoporosis with current pathological fracture, shoulder
M80.021A-M80.022S	Age-related osteoporosis with current pathological fracture, humerus
M80.031A-M80.032S	Age-related osteoporosis with current pathological fracture, forearm
M80.041A-M80.042S	Age-related osteoporosis with current pathological fracture, hand
M80.051A-M80.052S	Age-related osteoporosis with current pathological fracture, femur

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ICD-10-CM Diagnosis Codes	Description
M80.061A-M80.062S	Age-related osteoporosis with current pathological fracture, lower leg
M80.071A-M80.072S	Age-related osteoporosis with current pathological fracture, ankle and foot
M80.08XA-M80.08XS	Age-related osteoporosis with current pathological fracture, vertebra(e)
M80.0B1A-M80.0B9S	Age-related osteoporosis with current pathological fracture, pelvis
M80.811A-M80.812S	Other osteoporosis with current pathological fracture, shoulder
M80.821A-M80.822S	Other osteoporosis with current pathological fracture, humerus
M80.831A-M80.832S	Other osteoporosis with current pathological fracture, forearm
M80.841A-M80.842S	Other osteoporosis with current pathological fracture, hand
M80.851A-M80.852S	Other osteoporosis with current pathological fracture, femur
M80.861A-M80.862S	Other osteoporosis with current pathological fracture, lower leg
M80.871A-M80.872S	Other osteoporosis with current pathological fracture, ankle and foot
M80.88XA-M80.88XS	Other osteoporosis with current pathological fracture, vertebra(e)
M80.8B1A-M80.8B9S	Other osteoporosis with current pathological fracture, pelvis
M81.0-M81.8	Osteoporosis without current pathological fracture
M83.0-M83.9	Adult osteomalacia
M85.80	Other specified disorders of bone density and structure, unspecified site
M85.811	Other specified disorders of bone density and structure, right shoulder
M85.812	Other specified disorders of bone density and structure, left shoulder
M85.821	Other specified disorders of bone density and structure, right upper arm
M85.822	Other specified disorders of bone density and structure, left upper arm
M85.831	Other specified disorders of bone density and structure, right forearm
M85.832	Other specified disorders of bone density and structure, left forearm
M85.841	Other specified disorders of bone density and structure, right hand
M85.842	Other specified disorders of bone density and structure, left hand
M85.851	Other specified disorders of bone density and structure, right thigh
M85.852	Other specified disorders of bone density and structure, left thigh
M85.861	Other specified disorders of bone density and structure, right lower leg
M85.862	Other specified disorders of bone density and structure, left lower leg
M85.871	Other specified disorders of bone density and structure, right ankle and foot
M85.872	Other specified disorders of bone density and structure, left ankle and foot
M85.88	Other specified disorders of bone density and structure, other site
M85.89	Other specified disorders of bone density and structure, multiple sites
M85.9	Disorder of bone density and structure, unspecified

ICD-10-CM Diagnosis Codes	Description
N18.1-N18.9	Chronic kidney disease (CKD)
N25.81	Secondary hyperparathyroidism of renal origin
O99.841-O99.845	Bariatric surgery status complicating pregnancy, childbirth and the puerperium
Q78.0	Osteogenesis imperfecta
Q78.2	Osteopetrosis
Q96.0-Q96.9	Turner's syndrome
T30.0	Burn of unspecified body region, unspecified degree
T30.4	Corrosion of unspecified body region, unspecified degree
T45.2X1A-T45.2X6S	Poisoning by, adverse effect of and underdosing of vitamins
Z79.899	Other long term (current) drug therapy
Z87.310-Z87.312	Personal history of (healed) nontraumatic fracture
Z98.84	Bariatric surgery status

Not Covered or Reimbursable:

ICD-10-CM Diagnosis Codes	Description
	All other codes

Considered Medically Necessary when criteria in the applicable policy statements listed above are met:

CPT®* Codes	Description
82652	Vitamin D; 1, 25 dihydroxy, includes fraction(s), if performed

ICD-10-CM Diagnosis Codes	Description
A15.0-A19.9	Tuberculosis
B38.0-B38.9	Coccidioidomycosis
B39.0-B39.9	Histoplasmosis
C81.00-C81.9A	Hodgkin lymphoma
C82.00-C82.9A	Follicular lymphoma
C83.00-C83.9A	Non-follicular lymphoma
C84.00-C84.ZA	Mature T/NK-cell lymphomas
C85.10-C85.9A	Other specified and unspecified types of non-Hodgkin lymphoma
C86.00-C86.61	Other specified types of T/NK-cell lymphoma

ICD-10-CM Diagnosis Codes	Description
C88.00-C88.91	Malignant immunoproliferative diseases and certain other B-cell lymphomas
D86.0-D86.89	Sarcoidosis
E08.22	Diabetes mellitus due to underlying condition with diabetic chronic kidney disease
E09.22	Drug or chemical induced diabetes mellitus with diabetic chronic kidney disease
E10.22	Type 1 diabetes mellitus with diabetic chronic kidney disease
E11.22	Type 2 diabetes mellitus with diabetic chronic kidney disease
E13.22	Other specified diabetes mellitus with diabetic chronic kidney disease
E20.810	Autosomal dominant hypocalcemia
E64.3	Sequelae of rickets
E83.31-E83.39	Disorders of phosphorus metabolism and phosphatases
E83.89	Other disorders of mineral metabolism
I12.0	Hypertensive chronic kidney disease with stage 5 chronic kidney disease or end stage renal disease
I12.9	Hypertensive chronic kidney disease with stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease
I13.0-I13.2	Hypertensive heart and chronic kidney disease
J63.2	Berylliosis
M30.1	Polyarteritis with lung involvement [Churg-Strauss]
N18.1-N18.9	Chronic kidney disease (CKD)
N25.81	Secondary hyperparathyroidism of renal origin

Not Covered or Reimbursable:

ICD-10-CM Diagnosis Codes	Description
	All other diagnosis codes

General Background

Vitamin D is a fat-soluble vitamin. Very few foods naturally contain vitamin D (fatty fish and eggs are the exception), so vitamin D is obtained primarily through fortified foods or supplements and dermal synthesis from exposure to sunlight. Vitamin D has two forms, ergocalciferol (vitamin D2) and cholecalciferol (vitamin D3), and several metabolites.

Vitamin D from the diet or sunlight is biologically inactive and requires enzymatic conversion to active metabolites. Vitamin D is converted enzymatically:

- in the liver to 25-hydroxyvitamin D (25[OH]D), the major circulating form of vitamin D; and then
- in the kidney to 1,25-dihydroxyvitamin D (1,25[OH]2D), the active form of vitamin D.

The concentration of 25(OH)D is almost 1000-fold that of 1,25(OH)2D, and the half-life of 25(OH)D is much longer, implying that its concentration is more stable.

The most common type of vitamin D deficiency is 25-OH vitamin D. A much smaller percentage of 1, 25-dihydroxy vitamin D deficiency exists; mostly, in those with renal disease. Although it is not the active form of the hormone, 25-OH vitamin D is more commonly measured. It better reflects the sum total of vitamin D produced endogenously and absorbed from the diet than does the level of the active hormone 1, 25-dihydroxy vitamin D. Deficiency of 1, 25-dihydroxy vitamin D, which is present at much lower concentrations, does not necessarily reflect deficiency of 25-OH vitamin D. Its measurement should be limited to specific diseases such as acquired and inherited disorders in the metabolism of 25(OH)D and phosphate, including chronic kidney disease.

25(OH)D (CPT® code 82306)
The best laboratory indicator of vitamin D adequacy is the serum 25(OH)D concentration. It is the measurement of choice to diagnose vitamin D deficiency and to assess vitamin D status. The lower limit of normal for 25(OH)D levels varies depending on the geographic location and sunlight exposure of the reference population. There is no consensus on the optimal 25(OH)D concentration for skeletal or extraskeletal health. The Institute of Medicine (IOM) concluded that a serum 25(OH)D concentration of 20 ng/mL (50 nmol/L) is sufficient for most individuals. Other experts (Endocrine Society, National Osteoporosis Foundation, and American Geriatrics Society) suggest that a minimum level of 30 ng/mL (75 nmol/L) is necessary in older adults to minimize the risk of falls and fracture. Additionally, 25(OH)D measurements have had widespread variation in the results. Serum 25-OH-D assays fall into two main categories: (1) those based on a separation step of chromatography, the most popular of which is liquid chromatography–tandem mass spectrometry (LC-MS/MS) and (2) nonchromatographic methods based on antibody or protein binding, such as radioimmunoassays.

Serum 25(OH)D should be assessed in persons at risk for vitamin D deficiency or insufficiency. Vitamin D deficiency may result from:

- inadequate exposure to sunlight or intake of vitamin D
- reduced absorption of vitamin D (e.g., malabsorption syndromes)
- medications or disorders that affect the metabolism of vitamin D and phosphate (e.g., glucocorticoids, chronic kidney disease)
- resistance to the effects of vitamin D

Re-testing of vitamin D levels may be needed to ensure therapeutic benefit. Levels may take 3-5 months to plateau (Bacon, et al., 2009).

Vitamin D Toxicity: Another reason to measure serum 25(OH)D is when there is a suspicion of excessive vitamin D blood levels (toxicity). Because vitamin D increases calcium absorption in the gastrointestinal tract, vitamin D toxicity results in marked hypercalcemia (total calcium greater than 11.1 mg/dL, beyond the normal range of 8.4 to 10.2 mg/dL), hypercalciuria, and high serum 25(OH)D levels (typically greater than 375 nmol/l [150 ng/mL]) [155]. Hypercalcemia, in turn, can lead to nausea, vomiting, muscle weakness, neuropsychiatric disturbances, pain, loss of appetite, dehydration, polyuria, excessive thirst, and kidney stones (National Institute of Health, 2020).

1,25(OH)2D (CPT® code 82652)
Serum 1,25(OH)2D is not suitable to assess vitamin D status because it is kept within reference limits as long as possible by hormonal mechanisms (e.g., parathyroid hormone for stimulation and serum calcium and phosphate for suppression). Also, it has a short half-life measured in hours. Levels of 1,25(OH)2D do not typically decrease until vitamin D deficiency is severe.

Serum measurement of 1,25(OH)2D is useful in monitoring certain conditions, such as acquired and inherited disorders in the metabolism of 25(OH)D and phosphate, including chronic kidney disease, hereditary phosphate-losing disorders, oncogenic osteomalacia, pseudovitamin D-deficiency rickets, vitamin D-resistant rickets, as well as chronic granuloma-forming disorders such as sarcoidosis and some lymphomas (National Institute of Health, 2020; Enko, et al., 2015; Jones, 2015; Holick, et al., 2011; Lips, et al., 2007; Jan de Beur, et al., 2023).

Literature Review
There is a paucity of evidence evaluating the benefit and harm of testing for vitamin D. Peer-reviewed scientific literature primarily investigates the effects of vitamin D supplementation, not testing.

Bacon, et al., 2023, conducted a randomized double-blind trial on 63 adults age 65 years and older comparing three high dose vitamin D3 regimens. Individuals were excluded from the trial for creatinine clearance <20 mL/min, use of glucocorticoids for 6 or more months, recent calciferol treatment at doses greater than 600 IU/day, disorders or drugs that might influence vitamin D or PTH metabolism, or a life expectancy of less than 6 months. The study sought to determine the serum vitamin D response to the varying doses, the optimal levels of vitamin D, and the time to plateau. The enrolled subjects were followed for 9 months. 10 subjects withdrew due to health reasons, one subject moved away, and five subjects died during the study. 47 subjects completed the study. The results of the study demonstrated that the loading and loading plus monthly dosing groups showed similar serum vitamin D level changes followed by gradual plateau. The monthly dosing group demonstrated a more gradual rise in levels to a plateau at 5 months. A limitation of the study was the lack of a placebo-only group, which the authors noted was due to the ethical limitations of withholding treatment to frail, elderly, vitamin D deficient individuals. The study demonstrated a timeframe of 3-5 months for achieving a plateau of vitamin D levels.

Jan de Beur et al. (2023) published professional guidance for the recognition and management of tumor-induced osteomalacia. An international collaboration of specialists and experts performed a literature review and provided recommendation statements as a voting group using a modified Delphi approach. 83 publications were ultimately included for review. The panel stated, "measurement of 25(OH)D levels is necessary for diagnosing vitamin D deficiency, a common cause of hypophosphatemia and rickets/osteomalacia that must be differentiated from TIO." The volume of high-quality studies available for inclusion was limited due to the relative rarity of the condition. Thus, a limitation of this guidance was the lack of a systematic GRADE approach. Ultimately, the panel recommended the performance of vitamin D testing as part of a biochemical workup of suspected TIO (grade B, moderate recommendation).

Kahwati et al. (2021) conducted a systematic review for the U.S. Preventive Services Task Force (USPSTF) to assess the evidence about screening for vitamin D deficiency in adults. No studies evaluated the direct benefits or harms of screening for vitamin D deficiency. Because no studies were identified that evaluated screening for vitamin D deficiency, the evidence report was limited to an evaluation of the benefits and harms of vitamin D treatment among participants at risk for deficiency based on low serum vitamin D levels. Among asymptomatic, community-dwelling populations with low vitamin D levels, the evidence suggests that treatment with vitamin D 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 effect of treatment on physical functioning and infection.

Professional Societies/Organizations
Vitamin D testing is generally accepted by many professional societies and organizations as a potential diagnostic intervention in individuals with conditions where vitamin D deficiency is known to be more profound or increases the risk of complications.

Cystic Fibrosis Foundation
A systematic review conducted by the Cystic Fibrosis Foundation and published in 2012 resulted in the following recommendations (Tangpricha, et al., 2012):

- The CF Foundation recommends that all individuals with CF have serum 25-hydroxyvitamin D measured to assess vitamin D status (consensus recommendation).
- The CF Foundation recommends that all individuals with CF have serum 25-hydroxyvitamin D measured annually, preferably at the end of winter (consensus recommendation).
- The CF Foundation recommends against the use of serum 1,25(OH)2D as the measurement to assess vitamin D status in all individuals with CF (consensus recommendation).
- The CF Foundation recommends that all individuals with CF have serum 25-hydroxyvitamin D levels rechecked 3 months after the dose of vitamin D3 has been changed.

Endocrine Society
The Endocrine Society published a Clinical Practice Guideline on Vitamin D for the Prevention of Disease (Demay, et al., 2024). The guideline is intended to replace the previously issued guidance dated 2011. The guideline stated that there is not enough evidence to recommend vitamin D testing in "generally healthy adults who do not otherwise have established indications for 25(OH)D testing" (Demay et al., 2024). In the age groups for which the panel recommended against routine testing, it was noted that "25(OH)D thresholds that provide outcome-specific benefits have not been established in clinical trials" (Demay et al., 2024).

The following are the Endocrine Society recommendations for vitamin D testing, put forth as conditional recommendations with very low certainty of evidence:

- In the general adult population younger than age 50 years, we suggest against routine 25(OH)D testing.
- In the general population aged 50 to 74 years, we suggest against routine 25(OH)D testing.
- In the general population aged 75 years and older, we suggest against routine testing for 25(OH)D levels.
- During pregnancy, we suggest against routine 25(OH)D testing.
- In healthy adults, we suggest against routine screening for 25(OH)D levels.
- In adults with dark complexion, we suggest against routine screening for 25(OH)D levels.
- In adults with obesity, we suggest against routine screening for 25(OH)D levels.

An international working group published clinical practice guidelines in the journal of the Endocrine Society in 2025 with recommendations regarding the management of x-linked hypophosphatemia (XLH) in adults. The panel suggested that serum 25(OH)D measurements be performed in the initial diagnosis of adults with XLH (weak recommendation, very low certainty evidence) (Khan, et al., 2025).

Kidney Disease Improving Global Outcomes (KDIGO)
The 2017 Clinical Practice Guideline Update for the Diagnosis, Evaluation, Prevention, and Treatment of Chronic Kidney Disease-Mineral and Bone Disorder (CKD-MBD) from KDIGO provided the following suggestion with a low quality of evidence (KDIGO, 2017):

- Diagnosis of CKD-MBD: biochemical abnormalities
  - In patients with chronic kidney disease (CKD) stage G3a–G5D, we suggest that 25(OH)D (calcidiol) levels might be measured, and repeated testing determined by baseline values and therapeutic interventions.
- Evaluation and treatment of kidney transplant bone disease

- In patients with CKD stage G1T-G5T, we suggest that 25(OH)D (calcidiol) levels might be measured, and repeated testing determined by baseline values and interventions.

International Osteoporosis Foundation
The International Osteoporosis Foundation Vitamin D Working Group provided in their position statement that there was not sufficient evidence to justify broad screening of the general population for vitamin D deficiency in the absence of symptoms of underlying disease (Harvey, et al., 2024).

U.S. Preventive Services Task Force (USPSTF)
The 2021 Final Recommendation Statement on Screening for Vitamin D Deficiency in Adults stated:

- For asymptomatic, community-dwelling, non-pregnant adults: The USPSTF found that the evidence is insufficient to assess the balance of benefits and harms of screening for vitamin D deficiency. (Insufficient)
- This applies to community-dwelling, non-pregnant adults who have no signs or symptoms of vitamin D deficiency or conditions for which vitamin D treatment is recommended. It does not apply to persons who are hospitalized or living in institutions such as nursing homes.
- This recommendation is consistent with the 2014 USPSTF statement.

In summary, there is insufficient evidence to recommend for or against screening for vitamin D deficiency.

American Academy of Neurology (AAN)
The Consensus-based Care Recommendations for Adults with Myotonic Dystrophy Type 2 (Schoser, et al., 2019) listed vitamin D under 'Severe Symptoms, Endocrine and Metabolic', under 'Recommendations to test for'.

American Academy of Pediatrics (AAP)
The AAP Committee on Nutrition (Golden, et al., 2014) stated that evidence is insufficient to recommend universal screening for vitamin D deficiency. The AAP report advises screening for vitamin D deficiency "only in children and adolescents with conditions associated with reduced bone mass and/or recurrent low-impact fractures. More evidence is needed before recommendations can be made regarding screening of healthy black and Hispanic children or children with obesity. The recommended screening is measuring serum 25-OH-D concentration, and it is important to be sure this test is chosen instead of measurement of the 1,25-OH2-D concentration, which has little, if any, predictive value related to bone health."

The AAP listed the following conditions as those associated with reduced bone mass in children and adolescents (Golden, et al., 2014):

- Genetic conditions
  - Osteogenesis imperfecta
  - Idiopathic juvenile osteoporosis
  - Turner syndrome
- Chronic illness
  - Cystic fibrosis
  - Connective tissue disorders (lupus, juvenile idiopathic arthritis, juvenile dermatomyositis)
  - Inflammatory bowel disease, celiac disease
  - Chronic renal failure
  - Childhood cancer

  - Cerebral palsy
  - Chronic immobilization
- Eating disorders, including anorexia nervosa, bulimia nervosa, eating disorders not otherwise specified, and the female athlete triad
- Endocrine conditions
  - Cushing syndrome
  - Hypogonadism
  - Hyperthyroidism
  - Hyperparathyroidism
  - Growth hormone deficiency
  - Diabetes mellitus
- Medications
  - Glucocorticoids
  - Anticonvulsants
  - Chemotherapy
  - Leuprolide acetate
  - Proton pump inhibitors
  - Selective serotonin reuptake inhibitors
  - DMPA

American Association of Clinical Endocrinologists (AACE)
The AACE and American College of Endocrinology (ACE) published a Clinical Practice Guidelines for the Diagnosis and Treatment of Postmenopausal Osteoporosis (Camacho, et al., 2020) which included the following recommendation:

- R10. Measure serum 25-hydroxyvitamin D (25[OH]D) in patients who are at risk for vitamin D insufficiency, particularly those with osteoporosis (Grade B)(Grade A, Strong; Grade B, Intermediate; Grade C, Weak; Grade D, No conclusive evidence/expert opinion).

The AACE, American College of Endocrinology, Obesity Society, American Society for Metabolic & Bariatric Surgery (ASMBS), Obesity Medicine Association, and American Society of Anesthesiologists Clinical Practice Guidelines for the Perioperative nutrition, metabolic, and nonsurgical support of patients undergoing Bariatric procedures recommended:

- Baseline and annual postoperative evaluation for vitamin D deficiency is recommended after Roux-en-Y gastric bypass, sleeve gastrectomy, or laparoscopic biliopancreatic diversion without or with duodenal switch (Recommendation 53) (Grade B [strong]; BEL 2 [best evidence level 1= highest, 4 = lowest]) (Mechanick, et al., 2020).

American Association of Endocrine Surgeons (AAES)
The AAES Guidelines for the Definitive Surgical Management of Thyroid Disease in Adults stated, "Check vitamin D 25-OH level and if low, replete preoperatively" (Patel, et al., 2020).

The AAES Guideline for Definitive Management of Primary Hyperparathyroidism (Wilhelm, et al., 2016) included the following recommendation: 1-1: The biochemical evaluation of suspected primary hyperparathyroidism should include serum total calcium, PTH, creatinine, and 25-hydroxyvitamin D levels (strong recommendation; moderate quality evidence).

American College of Gastroenterology (ACG)
The ACG Guidelines Update: Diagnosis and Management of Celiac Disease (CD) noted that vitamin D testing may be included in the diagnosis of CD. Additionally, the ACG stated Blood tests at follow-up should be individualized to verify correction of laboratory tests that were abnormal at baseline (Rubio-Tapia, et al., 2023).

The ACG Clinical Guideline: Chronic Pancreatitis (Gardner, et al., 2020) stated that 'patients with chronic pancreatitis should have periodic evaluation for malnutrition, including tests for osteoporosis and fat-soluble vitamin deficiency'.

The ACG Clinical Guideline Management of Crohn's Disease recommendations included "Routine laboratory investigation: Initial laboratory investigation should include evaluation for inflammation, anemia, dehydration, and malnutrition" (Lichtenstein, et al., 2018).

The ACG Clinical Guideline on Primary Sclerosing Cholangitis (Lindor, et al., 2015) provided this recommendation: Patients with advanced liver disease should be screened and monitored for fat-soluble vitamin deficiencies. Fat-soluble vitamin deficiencies can occur in late stages of primary sclerosing cholangitis when patient becomes jaundiced. Levels of vitamins A, E, and D should be assessed in patients with advanced disease (Conditional recommendation, moderate quality of evidence).

American College of Obstetricians and Gynecologists (ACOG)
The ACOG Clinical Practice Guideline on Management of Postmenopausal Osteoporosis (2022), under Initial Evaluation for Secondary Osteoporosis (Box 2), lists '25-hydroxyvitamin D'.

The ACOG Committee Opinion on Vitamin D screening and supplementation during pregnancy (2011, reaffirmed 2024) stated there is insufficient evidence to support a recommendation for screening all pregnant women for Vitamin D deficiency. For pregnant women thought to be at increased risk of vitamin D deficiency, maternal serum 25-hydroxyvitamin D levels can be considered and should be interpreted in the context of the individual clinical circumstance.

The ACOG Clinical Practice Guidelines on Osteoporosis Prevention, Screening, and Diagnosis (2021) cited the Endocrine Society and USPSTF, noting that they state there is insufficient to assess the balance of benefits and harms of screening for vitamin D deficiency in asymptomatic adults.

American College of Rheumatology (ACR)
The ACR guideline for the prevention and treatment of glucocorticoid-induced osteoporosis (2023) stated that for adults and children starting or continuing chronic glucocorticoid treatment (at a dose of ≥ 2.5 mg/day for > 3 months), dietary and supplemental vitamin D optimization is recommended.
The guideline goes on to state "serum vitamin D levels should be monitored, and vitamin D supplemented to maintain serum vitamin D 25(OH)D levels ≥ 30 to 50 ng/mL" (Humphrey, et al., 2023).

American Gastroenterological Association (AGA)
The AGA Clinical Practice Update on Management of Refractory Celiac Disease: Expert Review stated that Celiac disease may be associated with both micronutrient and macronutrient deficiencies, recommending micronutrient status should also be evaluated objectively by testing for deficiency of fat-soluble vitamins (D) (Green, et al., 2022).

The AGA Clinical Practice Update on the Epidemiology, Evaluation, and Management of Exocrine Pancreatic Insufficiency (EPI) (Whitcomb, et al., 2023) noted the following:

- BEST PRACTICE ADVICE 15: EPI should be monitored, and baseline measurements of nutritional status should be obtained (body mass index, quality-of-life measure, and fat-soluble vitamin levels).

Bone Health & Osteoporosis FOUNDATION™
The Bone Health & Osteoporosis FOUNDATION™ (previously known as the National Osteoporosis Foundation [NOF]) Clinician's Guide to Prevention and Treatment of Osteoporosis (LeBoff, et al., 2022) noted the following specific to vitamin D testing:

Synopsis of major recommendations to the clinician:
Note: These recommendations apply to postmenopausal women and men aged 50 years and older.

- Universal recommendations
  - Monitor serum 25-hydroxyvitamin D levels.
- Diagnostic studies for exclusion of secondary causes of osteoporosis (Table 3)
  - 25(OH) vitamin D

American Geriatrics Society
A consensus statement by the American Geriatrics Society on Vitamin D for Prevention of Falls and Their Consequences included the following statements (American Geriatrics Society, 2014):

- Routine laboratory testing for 25(OH)D serum concentrations before supplementation begins is not necessary.
- It is not necessary for clinicians to routinely monitor 25(OH)D for safety of efficacy when supplementation is within the recommended limits.
- If clinicians choose to monitor25(OH)D, they are advised to test after 4 months of vitamin D3 supplementation to confirm that appropriate levels have been achieved.

Health Equity Considerations

Health equity is the highest level of health for all people; health inequity is the avoidable difference in health status or distribution of health resources due to the social conditions in which people are born, grow, live, work, and age.

Social determinants of health are the conditions in the environment that affect a wide range of health, functioning, and quality of life outcomes and risks. Examples include safe housing, transportation, and neighborhoods; racism, discrimination and violence; education, job opportunities and income; access to nutritious foods and physical activity opportunities; access to clean air and water; and language and literacy skills.

Underrepresented populations and individuals with lower socioeconomic status may benefit from vitamin D supplementation. The Endocrine Society noted that low vitamin D status is more prevalent among disadvantaged populations, who also face higher baseline risks for adverse outcomes such as poor maternal-fetal health, nutritional rickets, and diabetes. Consequently, these groups may derive greater absolute benefit from supplementation, increasing health equity. However, current evidence does not support broad recommendations for vitamin D screening tests based solely on socioeconomic status. The burden of additional testing and medical visits could decrease health equity when compared to empiric supplementation. Populations with deeper skin tones have been observed to have lower levels of vitamin D. Evidence has not suggested that screening otherwise healthy individuals with deeper skin tones results in improved outcomes. (Demay, et al. 2024)

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Revision Details

Type of Revision	Summary of Changes	Date
Annual review	• Revised policy statement indications and frequency of testing.	6/15/2026
Focused Review	• No clinical policy statement changes.	10/15/2025
Annual review	• Revised policy statement on frequency of testing.	3/15/2025
Focused review	• No clinical policy statement changes.	8/15/2024
Annual review	• No clinical policy statement changes.	3/15/2024
Focused review	• Revised frequency policy statement.	12/03/2023