The purpose of this guide is to highlight the Cigna Healthcare coverage policy for vitamin D testing, including a brief overview, instructions for use, medical necessity, general background information, and top ICD-10 codes currently utilized by ordering physicians which are defined by the policy as medically supportive. Individual plans may vary. For the most accurate coverage policy for each patient, please contact the patient’s health plan. See the full vitamin D Cigna Healthcare coverage policy here.

**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. 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.

**Coverage Policy**

Vitamin D testing is considered medically necessary for any of the following:

- known vitamin D deficiency (less than 20 ng/mL)
- known condition that impacts the ability of the body to use available vitamin D
- clinical concerns of vitamin D intoxication

Vitamin D testing for any other indication including screening in the general population is considered not medically necessary.

**Overview**

This Coverage Policy addresses serum vitamin D testing (CPT® codes 82306 and 82652) in a non-pregnant individual age 18 – 64 years.

**Related Coverage Resources**

- [Bone Mineral Density Measurement](#)
- [Preventive Care Services](#)

Visit [QuestDiagnostics.com/commercialcoverage](http://QuestDiagnostics.com/commercialcoverage) to view additional commercial insurance limited coverage tests, reference guides, and policy information.
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. Estimates of vitamin D requirements vary and depend in part upon sun exposure and the standards used to define a deficient state. In 2010, the Institute of Medicine (IOM) released a report on dietary intake requirements for calcium and vitamin D. The IOM committee assumed minimal sun exposure when establishing the dietary reference intakes for vitamin D. Casual exposure to sunlight provides amounts of vitamin D that are adequate to prevent rickets in many people, but is influenced by geographic location, season, use of sunblock lotion, and skin pigmentation. Vitamin D requirements also may depend on disease states and concomitant medications.

25(OH)D and 1,25(OH)2D

Vitamin D from the diet or dermal synthesis 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.

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 (range 8 to 15 ng/mL). However, there is no consensus on the optimal 25(OH)D concentration for skeletal or extraskeletal health. The IOM concluded that a serum 25(OH)D concentration of 20 ng/mL (50 nmol/L) is sufficient for most individuals, but other experts (Endocrine Society, National Osteoporosis Foundation, 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

Causes of malabsorption may include:

- diseases of the gallbladder, liver, or pancreas
- some conditions such as cystic fibrosis
- damage to the intestine from infection, inflammation, trauma, or surgery
- parasitic diseases
- certain congenital defects such as biliary atresia

Another reason to measure serum 25(OH)D is in hypercalcemic individuals when there is a suspicion of vitamin D intoxication. This may occur with over-the-counter drugs, fortification errors, or too-high doses for a prolonged period.

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). 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 (Dawson-Hughes, et al., 2017; National Institute of Health, 2017; Merck Manual, 2016; Pazirandeh, et al., 2016; Enko, et al., 2015; Jones, 2015; Holick, et al., 2011; Lip, et al., 2007).
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. LeBlanc et al. (2015) conducted a systematic review for the U.S. Preventive Services Task Force (USPSTF) to assess the benefits and harms of vitamin D screening in asymptomatic adults. LeBlanc et al. (2015) found “no study evaluated clinical outcomes or harms in persons screened versus not screened for vitamin D deficiency.” Limited evidence in persons not known to have conditions associated with vitamin D deficiency demonstrated that treating this deficiency with vitamin D may be associated with decreased risk for death in institutionalized elderly adults and a reduction in the average number of falls but not fractures. The authors conclude that future research is needed to reduce assay variability; determine appropriate thresholds for vitamin D deficiency; and clarify effects of screening, subsequent treatment, and the subpopulations most likely to benefit.

Several technology assessments and Cochrane systematic reviews have recently evaluated the use of vitamin D supplementation for a wide variety of conditions (e.g., cancer) and in various populations (e.g., elderly women).

The Agency for Healthcare Research and Quality (AHRQ) published a technology assessment (Newberry, et al., 2014) updating a previous technology assessment (Chung, et al., 2009) that assessed numerous factors related to vitamin D. Some of the summarizing statements noted from the authors include:

• Although a large number of new studies (and longer follow-ups 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 can be drawn.
• Studies identified for the current report suggest a possible U-shaped association between serum 25(OH)D concentrations and both all-cause mortality and hypertension and also suggest that the level of supplemental vitamin D and calcium administered in the Women’s Health Initiative Calcium-Vitamin D Trial are not associated with an increased risk for cardiovascular disease or cancer among postmenopausal women who are not taking additional supplemental vitamin D and calcium.
• Studies suggest the method used to assay 25(OH)D may influence the outcomes of dose-response assessments.
• Beyond these observations, it is 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 Washington State Health Care Authority Health Technology Assessment Program (HTA) published a technology assessment on vitamin D Screening and Testing in 2012. It was determined that no definitive conclusions can be drawn about the effectiveness of vitamin D screening or testing since no trials have been conducted to directly assess the impact of screening or testing on health outcomes, patient behavior, or clinical decision making. However, for some populations and outcomes, an association between serum levels and health outcomes and/or a positive effect of supplementation on health outcomes has been demonstrated. Thus, vitamin D screening has potential utility for identifying individuals who could benefit from the preventive or disease-modifying effects of supplementation in these clinical situations. Both vitamin D screening/testing and vitamin D supplementation are generally safe interventions.

An Ontario Health Technology Assessment on the Clinical Utility of Vitamin D Testing (2010) noted the following conclusions:

• Given the limitations associated with serum vitamin D measurement, ambiguities in the definition of a “target serum level,” and the availability of clear guidelines on vitamin D supplementation from Health Canada, Vitamin D testing is not warranted for the average risk population.
• Individuals with medical conditions such as renal and liver disease, osteoporosis, and malabsorption syndromes, as well as those taking medications that may affect vitamin D absorption/metabolism, should follow their physician’s guidance concerning both vitamin D testing and supplementation.

Several recent Cochrane reviews address the following topics and general conclusions:

• Vitamin D in reducing the risk of severe asthma exacerbations (Martineau, et al., 2016)
  ➢ People given vitamin D experienced fewer asthma attacks needing treatment with oral steroids (high-quality evidence).
  ➢ Vitamin D reduced the risk of attending hospital with an acute asthma attack (high-quality evidence).
  ➢ Vitamin D had little or no effect on lung function or day-to-day asthma symptoms (high-quality evidence).
  ➢ Vitamin D did not increase the risk of serious adverse events at the doses that were tested (moderate-quality evidence).
• Vitamin D in chronic painful conditions (Straube, et al., 2015)
  ➢ Found no consistent pattern that vitamin D treatment was better than placebo for any chronic painful condition (low-quality evidence).
• Vitamin D for prevention of mortality in healthy adults and adults in a stable phase of disease (Bjelakovic, et al., 2014)
  ➢ Vitamin D₃ may reduce mortality, showing that about 150 participants need to be treated over five years for one additional life to be saved.
  ➢ Found comparable effects of vitamin D₃ in studies that included only women compared with studies including both women and men.
  ➢ Vitamin D₃ may decrease cancer mortality, showing a reduction in mortality of 4 per 1000 persons treated for five to seven years.
  Adverse effects included renal stone formation (seen for vitamin D₃ combined with calcium) and elevated blood levels of calcium (seen for both alfacalcidol and calcitriol).
  ➢ A large number of study participants left the trials before completion, raising concerns regarding the validity of the results.

Numerous meta-analyses evaluating vitamin D supplementation have been published. Some of the areas analyzed include:
• atop dermatitis
• blood pressure
• bone health
• cancer mortality
• cardiovascular mortality
• COPD
• Crohn's disease
• dementia
• diabetes mellitus
• non-alcoholic fatty liver disease
• obesity
• pancreatitis
• preterm birth:
• respiratory tract infections
• rheumatic diseases

Theodoratou et al. (2014) conducted an assessment of the evidence across systematic reviews and meta-analyses of observational studies of plasma 25-hydroxyvitamin D or 1,25-dihydroxyvitamin D concentrations and randomized controlled trials of vitamin D supplementation. Total of 107 systematic literature reviews and 74 meta-analyses of observational studies of plasma vitamin D concentrations and 87 meta-analyses of randomized controlled trials of vitamin D supplementation were identified. The relation between vitamin D and 137 outcomes has been explored, covering a wide range of skeletal, malignant, cardiovascular, autoimmune, infectious, metabolic, and other diseases. The authors concluded that despite a few hundred systematic reviews and meta-analyses, highly convincing evidence of a clear role of vitamin D does not exist for any outcome, but associations with a selection of outcomes are probable.

Professional Societies/Organizations

U.S. Preventive Services Task Force (USPSTF):
The USPSTF Final Recommendation Statement Vitamin D Deficiency: Screening (November 2014) states:
• For community-dwelling, non-pregnant, asymptomatic adults age 18 years and older: The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for vitamin D deficiency in asymptomatic adults. Grade I – Insufficient.

This recommendation applies to community-dwelling, nonpregnant adults age 18 years or older who are seen in primary care settings and are not known to have signs or symptoms of vitamin D deficiency or conditions for which vitamin D treatment is recommended. This recommendation focuses on screening (that is, testing for vitamin D deficiency in asymptomatic adults and treating those who are found to have a deficiency), which is different from other USPSTF recommendation statements on supplementation (that is, recommending preventive medication for patients at increased risk for a specific negative health outcome, such as falls, regardless of whether they have a deficiency).

The USPSTF recognizes that there is no consensus on how to define vitamin D deficiency and does not endorse the use of a specific threshold to identify it. The evidence reviewed by the USPSTF used varying cut points. For the purposes of this recommendation statement, the term “vitamin D deficiency” is used to reflect evidence from study populations generally representing total serum 25(OH)D levels of 75 nmol/L (30 ng/mL) or less or subpopulations of studies with levels less than 50 nmol/L (<20 ng/mL).
Harms: Screening may misclassify persons with a vitamin D deficiency because of the uncertainty about the cut point for defining deficiency and the variability of available testing assays. Misclassification may result in overdiagnosis (which may lead to nondeficient persons receiving unnecessary treatment) or underdiagnosis (which may lead to deficient persons not receiving treatment).

Risk factors: Although there is not enough evidence to support screening for vitamin D deficiency, some evidence suggests factors that may increase risk for vitamin D deficiency. Persons with low vitamin D intake, decreased vitamin D absorption, and little or no sun exposure (for example, due to the winter season, high latitude, or physical sun avoidance) may be at increased risk for vitamin D deficiency. Obesity and darker skin pigmentation may also be associated with low levels of total serum 25-(OH)D, but whether these factors reflect vitamin D deficiency or increase the risk for adverse clinical outcomes is unclear. Some evidence suggests that older age and female sex may also be associated with increased risk for vitamin D deficiency; however, these findings are inconsistent.

Endocrine Society:
The Endocrine Society Clinical Practice Guideline on Evaluation, Treatment, and Prevention of vitamin D Deficiency (Holick, et al., 2011) makes the following recommendations specific to vitamin D testing:

- Recommend screening for vitamin D deficiency in individuals at risk for deficiency.
- Do not recommend population screening for vitamin D deficiency in individuals who are not at risk.
- Recommend using the serum circulating 25-hydroxyvitamin D [25(OH)D] level, measured by a reliable assay, to evaluate vitamin D status in patients who are at risk for vitamin D deficiency.
- Vitamin D deficiency is defined as a 25(OH)D below 20 ng/ml (50 nmol/liter), and vitamin D insufficiency as a 25(OH)D of 21–29 ng/ml (525–725 nmol/liter).
- Recommend against using the serum 1,25-dihydroxyvitamin D [1,25(OH)2D] assay for this purpose (patients at risk) and are in favor of using it only in monitoring certain conditions, such as acquired and inherited disorders of vitamin D and phosphate metabolism.

Rationale/evidence: There is no evidence demonstrating benefits of screening for vitamin D deficiency at a population level. Such evidence would require demonstration of the feasibility and cost-effectiveness of such a screening strategy, as well as benefits in terms of important health outcomes. In the absence of this evidence, it is premature to recommend screening at large at this time.

Currently, 25(OH)D measurement is reasonable in groups of people at high risk for vitamin D deficiency and in whom a prompt response to optimization of vitamin D status could be expected (Holick et al., Table 2).

Indications for 25(OH)D measurement (candidates for screening) (Holick et al., Table 2)

- Rickets
- Osteomalacia
- Osteoporosis
- Chronic kidney disease
- Hepatic failure
- Malabsorption syndromes
  - Cystic fibrosis
  - Inflammatory bowel disease
  - Crohn’s disease
  - Bariatric surgery
  - Radiation enteritis
- Hyperparathyroidism
- Medications
  - Antiseizure medications
  - Glucocorticoids
  - AIDS medications
  - Antifungals, e.g., ketoconazole
  - Cholestyramine
- African-American and Hispanic children and adults
- Pregnant and lactating women
- Older adults with history of falls
- Older adults with history of nontraumatic fractures
- Obese children and adults (BMI > 30 kg/m²)
• Granuloma-forming disorders
  ➢ Sarcoidosis
  ➢ Tuberculosis
  ➢ Histoplasmosis
  ➢ Coccidiomycosis
  ➢ Berylliosis
• Some lymphomas

American Academy of Pediatrics (AAP):
The AAP Committee on Nutrition (Golden, et al., 2014) states 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 lists the following Conditions Associated With Reduced Bone Mass in Children and Adolescents (Golden et al., Table 6):
• Genetic conditions
  ➢ Osteogenesis imperfecta
  ➢ Idiopathic juvenile osteoporosis
  ➢ Turner syndrome
• Chronic illness
  ➢ Cystic fibrosis
  ➢ Connective tissue disorders (lupus, idiopathic juvenile 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 College of Obstetricians and Gynecologists (ACOG):
The ACOG Committee Opinion on vitamin D screening and supplementation during pregnancy (2011, reaffirmed 2017) states that 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.
American Geriatrics Society (AGS):
The American Geriatrics Society Consensus Statement on vitamin D for Prevention of Falls and Their Consequence (2014) makes the following recommendations specific to vitamin D testing:
• 4a: Routine laboratory testing for 25(OH)D serum concentrations before supplementation begins is not necessary.
• 4b: It is not necessary for clinicians to routinely monitor 25(OH)D for safety or efficacy when supplementation is within the recommended limits.
• 4c: If clinicians choose to monitor 25(OH)D, they are advised to test after four months of vitamin D3 supplementation to confirm that appropriate levels have been achieved.

American College of Rheumatology:
The American College of Rheumatology Guideline for the Prevention and Treatment of Glucocorticoid-Induced Osteoporosis (Buckley, et al., 2017) does not address vitamin D testing. The guideline notes that optimizing calcium intake (1000–1200 mg/day) and vitamin D intake (600–800 IU/day; serum level ≥20 ng/ml) as well as lifestyle modifications are conditionally recommended for all patients receiving glucocorticoid treatment.

National Institute of Health (NIH):
The NIH Vitamin D Fact Sheet for Health Professionals (February 2016) lists these following “Groups at Risk of Vitamin D Inadequacy”:
• Breastfed infants
• Older adults
• People with limited sun exposure
• People with dark skin
• People with inflammatory bowel disease and other conditions causing fat malabsorption
• People who are obese or who have undergone gastric bypass surgery

National Osteoporosis Foundation (NOF):
The NOF’s Clinician’s Guide to Prevention and Treatment of Osteoporosis (Cosman, et al., 2014) notes the following specific to vitamin D testing:
• Consider the following diagnostic studies for secondary causes of osteoporosis: serum 25-hydroxyvitamin D (25[OH]D).
• Since Vitamin D intakes required to correct vitamin D deficiency are so variable among individuals, serum 25(OH)D levels should be measured in patients at risk of deficiency. vitamin D supplements should be recommended in amounts sufficient to bring the serum 25(OH)D level to approximately 30 ng/ml (75 nmol/L) and a maintenance dose recommended to maintain this level, particularly for individuals with osteoporosis. Definition of vitamin D insufficiency is serum 25-hydroxyvitamin D (25[OH]D)<30 ng/ml (75 nmol/L).

American Association of Endocrine Surgeons (AAES):
The AAES Guideline for Definitive Management of Primary Hyperparathyroidism (Wilhelm, et al., 2016) recommends:
• 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 Association of Clinical Endocrinologists and American College of Endocrinology:
These organizations have published a Clinical Practice Guidelines for the Diagnosis and Treatment of Postmenopausal Osteoporosis (Camacho, et al., 2016) which includes the following recommendation:
• R9: Measure serum 25-hydroxyvitamin D (25[OH]D) in patients who are at risk for vitamin D insufficiency, particularly those with osteoporosis (Grade B).

American College of Gastroenterology (ACG):
The ACG Clinical Guideline on Primary Sclerosing Cholangitis (Lindor, et al., 2015) provides 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).
The ACG Clinical Guideline on the Diagnosis and Management of Celiac Disease (Rubio-Tapia, et al., 2013) recommends:

• People with newly diagnosed celiac disease should undergo testing and treatment for micronutrient deficiencies. Deficiencies to be considered for testing should include, but not be limited to, iron, folic acid, vitamin D, and vitamin B12 (conditional recommendation, low level of evidence).

American College of Physicians:
The American College of Physicians Clinical Practice Guideline Update on Treatment of Low Bone Density or Osteoporosis to Prevent Fractures in Men and Women (Qaseem, et al., 2017) does not address testing for vitamin D.

American Heart Association (AHA):
The American Heart Association, American College of Cardiology, and American Geriatrics Society published a Scientific Statement on Knowledge Gaps in Cardiovascular Care of the Older Adult Population (Rich, et al., 2016). One of the Recommendations to Close Knowledge Gaps stated:

• Studies are needed to evaluate specific dietary patterns (e.g., sodium and potassium intake, fluid intake), as well as the role of dietary supplements (e.g., coenzyme Q10, vitamin D) in older patients with heart failure with reduced ejection fraction (HFrEF) or heart failure with preserved ejection fraction (HFpEF) and whether optimal intake of these and other nutrients varies as a function of age, renal function, and hepatic function.

The American Board of Internal Medicine’s (ABIM) Foundation Choosing Wisely® Initiative:

• Endocrine Society: Don’t routinely measure 1,25-dihydroxyvitamin D unless the patient has hypercalcemia or decreased kidney function (October 2013).
• American Society for Clinical Pathology: Don’t perform population based screening for 25-OH-Vitamin D deficiency (February 2013).

Use Outside of the U.S.
The Australian government Department of Health conducted a Medicare Benefits Schedule (MBS) review on vitamin D testing (February 2014). In the review, it stated that the Royal Australian College of General Practitioners (RACGP) 2012 guidelines for preventative activities in general practice advise that routine screening for vitamin D deficiency is not recommended in low-risk populations. However, targeted testing of people who are at risk of osteoporosis and who are at high risk of vitamin D deficiency should be considered. High-risk groups for vitamin D deficiency in pregnancy may also benefit from vitamin D screening. The guidelines do not advise on the frequency of testing.

The European Society for Pediatric Endocrinology examined the current global best practice in nutritional rickets and formulated evidence-based recommendations. The consensus document titled Global Consensus Recommendations on Prevention and Management of Nutritional Rickets (Munns, et al., 2016) makes the following statements specific to vitamin D testing:

• In healthy children, routine 25(OH)D screening is not recommended, and consequently, no specific 25(OH)D threshold for vitamin D supplementation is targeted in this population.
• Screening for nutritional rickets should be based on clinical features, followed by radiographic confirmation of suspected cases. Population-based screening with serum 25(OH)D, serum alkaline phosphatase (ALP), or radiographs is not indicated.
Appendix A

Known diagnosis or condition associated with vitamin D deficiency:

- Rickets
- Osteomalacia
- Osteoporosis
- Chronic kidney disease
- Hepatic failure

- Malabsorption syndromes:
  - Cystic fibrosis
  - Inflammatory bowel disease
  - Crohn's disease
  - Bariatric surgery
  - Radiation enteritis

- Hyperparathyroidism

- Medications:
  - Antiseizure medications
  - Glucocorticoids
  - AIDS medications
  - Antifungals, e.g. ketoconazole
  - Cholestyramine

- Older adults with history of falls
- Older adults with history of nontraumatic fractures

- Granuloma-forming disorders:
  - Sarcoidosis
  - Tuberculosis
  - Histoplasmosis
  - Coccidiomycosis
  - Berylliosis

- Lymphomas
The ICD-10 codes listed below are the top diagnosis codes currently utilized by ordering physicians for the medical coverage test highlighted above that are also listed as medically supportive under Cigna’s coverage policy. If you are ordering this test for diagnostic reasons that are not covered under Cigna’s policy, patient may be responsible for payment.

<table>
<thead>
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<th>Code</th>
<th>Description</th>
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<tr>
<td>E55.9</td>
<td>Vitamin D deficiency, unspecified</td>
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<td>Z79.899</td>
<td>Other long term (current) drug therapy</td>
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<td>M81.0</td>
<td>Age-related osteoporosis without current pathological fracture</td>
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<tr>
<td>N18.3</td>
<td>Chronic kidney disease, stage 3 (moderate)</td>
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<tr>
<td>Z98.84</td>
<td>Bariatric surgery status</td>
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<tr>
<td>M85.80</td>
<td>Other specified disorders of bone density and structure, unspecified site</td>
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<td>E83.52</td>
<td>Hypercalcemia</td>
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<td>K76.0</td>
<td>Fatty (change of) liver, not elsewhere classified</td>
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<tr>
<td>N18.2</td>
<td>Chronic kidney disease, stage 2 (mild)</td>
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<tr>
<td>K91.2</td>
<td>Postsurgical malabsorption, not elsewhere classified</td>
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<td>Secondary hyperparathyroidism of renal origin</td>
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<td>Celiac disease</td>
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<td>M06.9</td>
<td>Rheumatoid arthritis, unspecified</td>
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<tr>
<td>N18.4</td>
<td>Chronic kidney disease, stage 4 (severe)</td>
</tr>
<tr>
<td>M85.9</td>
<td>Disorder of bone density and structure, unspecified</td>
</tr>
</tbody>
</table>

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Disclaimer:
This diagnosis code reference guide is provided as an aid to physicians and office staff to help inform you of the limited coverage policy. Diagnosis codes must be applicable to the patient’s symptoms or conditions and must be consistent with documentation in the patient’s medical record. Quest Diagnostics does not recommend any diagnosis codes and will only submit diagnosis information provided to us by the ordering physician or his/her designated staff. The CPT codes provided are based on AMA guidelines and are for informational purposes only. CPT coding is the sole responsibility of the billing party. Please direct any questions regarding coding to the payer being billed. Please see the payer’s full vitamin D coverage policy for a complete list of references.

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