## Medical Coverage Policy

**Effective Date.....08/17/2024**
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**Coverage Policy Number..... 0567**

# Serum Folate and Red Blood Cell Folate Testing

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## Related Coverage Resources

***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 serum folate and red blood cell (RBC) folate testing which are two methods of folate testing.

## Coverage Policy

**Serum folate testing (Current Procedural Terminology [CPT®] code 82746) is considered medically necessary for EITHER of the following:**

- Suspected diagnosis of folate deficiency associated with ANY of the following:
    - Anemia, where folate deficiency is in the differential diagnosis (e.g., megaloblastic anemia with or without other associated cytopenias).
    - Neural tube defects and neurologic disorders where folate deficiency is known to be a potential underlying cause.
    - Diseases of the digestive system associated with malabsorption.
    - Eating disorders.
- Monitoring treatment of folate deficiency.

**Serum folate testing is not covered or reimbursable for ANY other indication.**

**Red blood cell (RBC) folic acid testing (Current Procedural Terminology [CPT®] code 82747) is not covered or reimbursable.**

## General Background

Folate, also called vitamin B9 is a water-soluble B vitamin. Folate has many chemical forms, including naturally in foods such as leafy greens, fruits, nuts, beans, peas, seafood, eggs, dairy products, meat, and poultry. Folic acid is the synthetic form of folate that is found in supplements and added to fortified foods (US Preventive Services Task Force, 2023).

The recommended daily intake of folate ranges from 65 mcg of dietary folate equivalents in infants to 400 mcg of dietary folate equivalents in adults, with higher requirements during pregnancy and lactation (600 and 500 mcg, respectively). Total body folate stores are estimated to be approximately 500 to 20,000 mcg (0.5 to 20 mg). If folate intake ceases, deficiency may develop within weeks to months, or more rapidly if demands for folate are increased. Folic acid overdose is not a major consideration since excess is excreted in the urine.

Folate deficiency has become less common in the United States and many other resource-rich countries following the implementation of routine folic acid supplementation of foods. The Food Fortification Initiative (FFI) has been instituted in many countries, which focuses on the fortification of industrially milled wheat flour, maize flour and rice. This is primarily aimed at

reducing the risk of neural tube defects during embryogenesis. However, populations with poor access to nutritious foods or reduced dietary intake are still at risk (Means and Fairfield, 2023a; Means and Fairfield, 2023b).

**Folate Deficiency:**
Folate measurements should only be ordered to confirm a deficiency in a symptomatic individual. They should not be used to assess the risk of neural tube defects (NTD) or be used as a population screening tool. Most commonly, folate testing is used in the workup of megaloblastic anemia and the workup of neurologic disease (Stabler, 2024).

Conditions that may be associated with folate deficiency include but are not limited to the following:

- Increased requirements:
  - Pregnancy
  - Hemolytic anemia
  - Exfoliative skin diseases
- Intestinal malabsorption
- Certain medications
- Loss during hemodialysis
- Decreased dietary intake
- Rare genetic disorders

There are conditions that are associated with increased cell proliferation, which increased the need for folates for DNA synthesis. Individuals that are pregnant have chronic hemolytic anemias or exfoliative skin diseases, such as severe eczema, are often given daily folic acid to prevent deficiency Folate deficiency in pregnancy can result in birth defects (anencephaly and spina bifida), which underlies the strong recommendation for folic acid supplementation in women of reproductive age. Inadequate maternal folate intake has also been associated with low infant birth weight, preterm delivery, and fetal growth retardation.

Malabsorption of folates/folic acid supplements can occur if the intestinal absorptive surface has been removed or is dysfunctional. This can result from surgery (e.g., gastric bypass) or inflammatory disorders such as celiac disease and tropical sprue. Medications can interfere with folate metabolism and may cause folate deficiency and/or megaloblastic anemia due to effects on DNA synthesis. These medications include methotrexate and sulfasalazine. When patients are unable to consume a varied, nutrient-rich diet may develop folate deficiency. Examples include those with restrictive diets, chronic alcohol use with a limited diet, severe anorexia, or reduced oral intake in the setting of a systemic illness (Stabler, 2024; Means and Fairfield, 2023a, 2023b, 2023c; Dukhovny and Wilkins-Haug, 2023; Goetzi, 2023; National Institutes of Health (NIH), 2022.

Presentation of folate deficiency is frequently associated with a history of excessive alcohol intake with concurrent poor diet intake. Other patients may be pregnant or lactating; may take certain drugs, such as phenytoin, sulfonamides, or methotrexate; may have chronic hemolytic anemia; or may have underlying malabsorption. Patients with folate deficiency can present with anemia and/or have vague or nonspecific symptoms (fatigue, irritability, cognitive decline), which are partly due to anemia. Additionally, some patients complain of a sore tongue or pain upon swallowing and irritated, cracked sores on one or both corners of your mouth may be observed. These oral lesions typically occur at the time when folate depletion is severe enough to cause megaloblastic anemia, although, occasionally, lesions may occur before the anemia. Patients may also present with gastrointestinal (GI) signs and symptoms, such as nausea, vomiting, abdominal

pain, and diarrhea, especially after meals. Anorexia in combination with the above symptoms, may lead to marked weight loss. Neuropsychiatric presentations of folate deficiency may occur and include cognitive impairment, dementia, and depression (Means and Fairfield, 2023b; Coffey-Vega, 2022).

There are certain malabsorptive conditions which may be associated with a combined deficiency of vitamin B12 and folate or combined deficiency of one of these vitamins and iron. Examples include:

- Bariatric surgery
- Malabsorptive states
- Severely limited diets

Anemia is defined as a reduction in one or more of the major red blood cell (RBC) measurements obtained in the complete blood count (CBC): hemoglobin concentration, hematocrit, or RBC count. A low hemoglobin concentration and/or low hematocrit are the parameters most widely used to diagnose anemia. The red blood cell (RBC) indices describe RBC size, hemoglobin content, and uniformity of the RBC population. These values can be very helpful in determining the cause of anemia. The mean corpuscular volume (MCV) and red cell distribution width (RDW) are generally the most useful. Deficiencies of vitamin B12 and/or folate can cause megaloblastic anemia (macrocytic anemia with other features due to impaired cell division) (Means and Brodsky, 2022).

Megaloblastic anemia (or megaloblastic changes) describes a subset of macrocytic anemias in which the increased size of RBCs is caused by abnormal cell division in RBC precursors in the bone marrow. Megaloblastic anemia is a form of macrocytic anemia from ineffective red blood cell production and intramedullary hemolysis (Barcellini, 2022). Megaloblastic anemia is most commonly caused by folate deficiency from dietary deficiency, alcoholism, or malabsorption syndromes or by vitamin B12 deficiency, usually due to pernicious anemia (Means and Brodsky, 2022).

When assessing unexplained macrocytosis (high MCV) or macrocytic anemia, the CBC and/or blood smear would guide diagnosis. For a folate or B12 deficiency, the findings can include the following (Means and Brodsky, 2022):

- Anemia
- Macrocytic red blood cells (RBCs; e.g., mean corpuscular volume [MCV] > 100 fL) or macro-ovalocytosis
- Mild leukopenia and/or thrombocytopenia
- Low reticulocyte count
- Hypersegmented neutrophils on the peripheral blood smear

Oral folic acid (1 to 5 mg daily) is the most common treatment of a folate deficiency, even if malabsorption is present. This dose is usually sufficient because it is above the 200 mcg (0.2 mg) recommended dietary allowance. For women at low risk of NTD, the standard folic acid supplement (multivitamin, prenatal vitamin) is 0.4 mg daily, beginning at least one month prior to attempting conception and continuing throughout pregnancy and for four to six weeks postpartum or until completion of breastfeeding. This is in addition to the amount of food folate contained in a healthy eating pattern. Females who are at higher risk of having a child with an NTD are candidates for higher dose folic acid supplementation (Goetzl, 2023, Means and Fairfield, 2023c).

The reversible causes of deficiency are generally treated for one to four months or until there is laboratory evidence of hematologic recovery. For those with a chronic cause of folate deficiency,

such as chronic hemolytic anemia, therapy may be given indefinitely. Periconceptional folic acid supplementation, food fortification with folic acid, and prenatal screening for NTDs combined with access to pregnancy termination have led to a decrease in the prevalence of NTDs at birth where these interventions are applied. Intravenous folic acid may be appropriate in certain settings, such as individuals who are unable to take an oral medication (e.g., due to vomiting or obtundation) or those who have severe or symptomatic anemia due to folate deficiency and hence have a more urgent need for rapid correction (Coffey-Vega, 2022).

## Literature Review –Folate Deficiency:

There is a paucity of evidence evaluating the benefit and harm of testing for folate deficiency. Peer-reviewed scientific literature primarily investigates the effects of folic acid supplementation, not testing.

Canadian Agency for Drugs and Technologies in Health (CADTH) conducted a health technology review on folate testing in people with suspected folate deficiency. The author explained that despite the low prevalence of folate deficiency in Canada and the US, serum folate tests continue to be ordered often to assess macrocytic anemia or cognitive abnormalities. However, evidence has shown that serum folate tests in both outpatient and inpatient populations provide low yield in detecting folate deficiency. This has led to the suggestion that serum folate tests should not be routinely ordered, even in patients with macrocytic anemia. This review was done to summarize the evidence regarding diagnostic accuracy, clinical utility, cost-effectiveness and evidenced based guidelines regarding serum folate testing in people with suspected folate deficiency. The report concluded that there was no relevant literature or evidence-based guidelines identified regarding diagnostic test accuracy, clinical utility, cost-effectiveness, or recommendations for serum folate testing in people with suspected folate deficiency; therefore, no summary can be provided (Tran, et al., 2023).

Epstein-Peterson et al (2020) studied the rate of folate deficiency among inpatients with cancer at a cancer center. The study focused on the value of repeated inpatient testing over the single calendar year and co-testing for vitamin B12 deficiency and evaluated the appropriateness of prescribing practices around folate deficiency. Lastly, the relationship between folate deficiency and survival in this patient population was examined. There were 1065 test performed in 937 patients with 7.0% indicating a folate deficiency. The maximum number of tests for a single patient was four, which occurred in five patients, followed by three tests in 14 patients, two tests in 85 patients, and one test in 833 patients. Repeat inpatient testing was low yield with most of the patients never testing folate deficient. Additionally, the authors reported that a folate deficiency was associated with higher risk for death. The authors concluded that folate deficiency was rare in hospitalized cancer patients. The testing for folate deficiency in admitted patients with cancer remains low yield, especially when performed repeatedly, and does not effectively guide therapy. Routine testing as a method for improving care value, even in this at-risk population is not supported.

## Literature Review – Methods of Folate Testing

Initial laboratory tests should include a complete blood count (CBC) and a peripheral smear (PS). Laboratory tests in folic acid deficiency would reveal anemia, manifesting as a decrease in hemoglobin and hematocrit levels. Plasma/serum folate may also be measured and is a short-term measurement of folate status based recent folic acid intake. Red blood cell (RBC) folate concentration is a measurement of folate in tissue and is a long-term measurement of folate status over the lifetime of RBCs (Means and Fairfield, 2023b).

There is very poor standardization between folate assays. In one report, a comparison of five automated serum and RBC folate assays showed differences of up to 40% for serum folate and up

to 250% for RBC folate. Studies comparing serum folate with RBC folate have found that addition of RBC folate to serum folate testing does not provide substantially more clinical information (Owen and Roberts, 2003). Red blood cell folate is proposed to provide long term folate status, however, the methodology of measuring folate in the presence of the red cell protein matrix has led to poor reproducibility, and the assay cannot be recommended for routine clinical use outside of research investigations (Stabler, 2024).

Cummings et al. (2017) conducted a a cross-sectional study of dietary and genetic predictors of blood folate levels in healthy young adults. The study investigated blood folate level determinants in healthy young adults (n=265), including intake of naturally occurring food folate, synthetic FA, and the interaction of naturally occurring food folate with a common missense variant in the FOLH1 gene thought to affect absorption. The study reported that in healthy young individuals exposed to folic acid fortification, blood folate level is dependent on relative intake from naturally occurring food folate and synthetic sources of folic acid, and on genetic variation in FOLH1 484 genotype. The study also compared serum folate to RBC folate and explained that compared to serum folate, RBC folate is thought to provide a better estimate of folate levels within body tissues. However, RBC folate measurement may be considerably more vulnerable to small variations in sample storage and analysis, which may make it a less reliable measure of folate status. The study also mentioned that RBC folate assays are not standardized and results in the study obtained using ECLIA could not be compared to epidemiological cutoffs for RBC folate insufficiency.

Gilfix (2014) reviewed the utility of serum folate testing compared to red blood cell (RBC) folate testing in the era of folate fortification of flour, which has increased folate concentrations in the general population. Data from three hospitals in Canada on both serum and RBC folate levels were analyzed. While theoretically RBC folate is less susceptible to rapid changes in dietary intake, analytically, the assays have large imprecisions, which limit their usefulness. The authors concluded that there is no evidence to support routine ordering of RBC or serum folate. Even pre-selection of patients seems not to increase the prevalence of measured folate deficiency. Additionally, based on the performance statistics, and as serum folate provides equivalent results to RBC folate in almost all clinical scenarios, routine ordering of RBC folate is no longer warranted.

Farrell et al. (2013) conducted a comprehensive published review of the two folate methods and concluded that assessing a patients folate status can be clinically important evaluation and laboratories are readily able to provide the measurement of serum or red cell folate using automated competitive protein binding (CPB) assays. However, "after assessing many different aspects of the performance of serum and red cell folate assays, this review did not find evidence to justify the higher cost of routinely measuring red cell folate".

There is insufficient evidence to support the accuracy and clinical utility RBC folate testing for the diagnosis of a folate deficiency.

## Professional Societies/Organizations – Neural Tube Defects

**US Preventive Services Task Force (USPSTF):** In 2023, the USPSTF reaffirmed that "for persons who are planning to or could become pregnant, there is high certainty that folic acid supplementation has a substantial net benefit to prevent neural tube defects in their offspring". The task force recommended that all persons planning to or who could become pregnant take a daily supplement containing 0.4 to 0.8mg (400 to 800 µg) of folic acid (USPSTF, 2023).

**American College of Obstetricians and Gynecologists (ACOG):** ACOG's 2021 update on anemia in pregnancy stated that all pregnant women should be screened for anemia using a complete blood count in the first trimester and again at 24 0/7–28 6/7 weeks of gestation.

Patients have hematocrit levels less than 33% in the first and third trimesters and less than 32% in the second trimester should be evaluated further to determine the cause. If iron deficiency is ruled out, other etiologies should be investigated. This recommendation is based primarily on consensus and expert opinion (ACOG, 2021).

ACOG's joint committee opinion with American Society for Reproductive Medicine (2019) on prepregnancy counseling stated that female prepregnancy folic acid supplementation should be encouraged to reduce the risk of neural tube defects. There was no mention of measuring serum folate.

ACOG's 2017 practice bulletin on neural tube defects (NTDs) stated that the association between folic acid supplementation and decreased risk of NTDs is well established. Folate supplementation is an important prepregnancy and prenatal recommendation. ACOG recommended the following (ACOG, 2017):

- All women who are planning a pregnancy or able to become pregnant should take folic acid supplementation of 400 micrograms daily.
- Supplementation should start at least 1 month prior to pregnancy and continue through the first 12 weeks of pregnancy.
- Those who are at high risk of NTDs should take 4,000 micrograms of folic acid daily. This should start 3 months before pregnancy and continue until 12 weeks of gestational age.

## Professional Societies/Organizations – Bariatric Procedures

**American Association of Clinical Endocrinologists (AACE), American College of Endocrinology (ACE), The Obesity Society (TOH), American Society for Metabolic & Bariatric Surgery (ASMBS), Obesity Medicine Association (OMA), American Society of Anesthesiologists (ASA):** In 2019, the AACE, ACE, TOH, ASMBS, OMA and ASA published an update to the 2013 clinical practice guidelines for the perioperative nutrition, metabolic, and nonsurgical support of patients undergoing bariatric procedures. In regard to folate testing the guideline recommended (Mechanick, et al., 2020):

- malabsorptive bariatric procedures can cause nutritional anemias that may involve deficiencies in vitamin B12, folate, protein, copper, selenium, and zinc and may be evaluated when routine aggressive case finding for iron-deficiency anemia is negative.

**American Society for Metabolic and Bariatric Surgery (ASMBS):** The 2016 integrated health nutritional guidelines for the surgical weight loss patient on micronutrients recommended that pre-weight loss surgery (WLS) nutrient screening should is recommended for all patients. A folate deficiency would be suspected when the RBC folate is decreased, the serum homocysteine is increased and a normal MMA level.

Additionally, the ASMBS recommended for the prevention of micronutrient deficiency post-weight loss surgery (WLS) patients should take 400–800 mg oral folate daily from their multivitamin and women of childbearing age should take 800–1000 mg oral folate daily (Parrott, et al., 2017).

## Professional Societies/Organizations – Gastrointestinal Malabsorption

**American College of Gastroenterology (ACG):** In 2023, the ACG updated the 2013 diagnosis and management of celiac disease guideline. Patients with symptoms, signs, or laboratory evidence suggestive of malabsorption, such as chronic diarrhea with weight loss, steatorrhea, irritable bowel syndrome, abdominal pain, and bloating, should be considered for testing for CD. Testing an EGD with biopsies and serology (tissue transglutaminase [TTG]), other tests could be used which includes complete blood count, alanine aminotransferase, aspartate aminotransferase,

vitamins (A, D, E, B12), copper, zinc, folic acid, ferritin, and iron. There is no recommendation or level of evidence attached to this statement (Rubio-Tapi, et al., 2023).

The ACG clinical practice update (2022) on management of short bowel syndrome provided a best practice advice for a nutritional assessment. The initial comprehensive nutritional assessment should be performed by a dietitian experienced in SBS. All patients should be assessed and folate is one of the vitamins to be assessed with recommended supplementation of 1 mg of folate daily.

**American Gastroenterological Association (AGA):** The AGA clinical practice update, expert review on the epidemiology, evaluation, and management of exocrine pancreatic insufficiency (EPI) explained that clinical features of EPI include steatorrhea with or without diarrhea, weight loss, bloating, excessive flatulence, fat soluble vitamin deficiencies, and protein-calorie malnutrition. The AGA's best practice advice included that "screening for vitamin and mineral deficiencies (vitamins A, D, E, K, B12, folate, magnesium, selenium zinc, and iron studies) at the time of diagnosis and then annually based on the clinical status of the patient, remains essential" (Whitcomb, et al., 2023).

In the AGA's clinical practice update on management of refractory celiac disease: expert review a detailed nutritional assessment should be done for macronutrient and micronutrient deficiencies. The deficiencies should be corrected using oral supplementation (Green, et al., 2022).

**Professional Societies/Organizations – Eating Disorders**

**American Psychiatric Association (APA):** In 2023, the APA's practice guideline for the treatment of patients with eating disorders recommended the following:

- initial physical examination should include (Crone, et al., 2023):
    - vital signs, including temperature, resting heart rate, blood pressure, orthostatic pulse, and orthostatic blood pressure; height, weight, and BMI and physical appearance, including signs of malnutrition or purging behaviors.
    - laboratory assessment should include a complete blood count and a comprehensive metabolic panel, including electrolytes, liver enzymes, and renal function tests.

**American Academy of Pediatrics (AAP):** The AAP (2021) recommended a comprehensive assessment of children and adolescents with suspected eating disorders that includes a detailed and comprehensive physical examination and a full psychosocial assessment. Initial laboratory testing is done to screen for medical complications of eating disorders or to rule out alternate diagnoses. Typical initial laboratory testing includes a complete blood cell count; serum electrolytes, calcium, magnesium, phosphorus, and glucose; liver transaminases; urinalysis; and thyroid-stimulating hormone. Additionally, screening for specific vitamin and mineral deficiencies (e.g., vitamin B12, vitamin D, iron, and zinc) may be done on an individual basis depending on the nutritional history of the patient. The AAP explained that laboratory values are often normal in patients with eating disorders, however normal results do not exclude the presence of serious illness with an eating disorder or the need for hospitalization for medical stabilization (Hornberger, et al., 2021).

## Professional Societies/Organizations – Methods of Folate Testing

**American Board of Internal Medicine's (ABIM) Foundation Choosing Wisely® Initiative:** A Choosing Wisely statement from American Society for Clinical Pathology (ASCP) stated "do not order red blood cell folate levels at all. In adults, consider folate supplementation instead of serum folate testing in patients with macrocytic anemia."

The ASCP mentioned that it is rare to have a patient with a folate deficiency and simply treating with folic acid is a more cost-effective approach than blood testing. Additionally, red blood cell

folate levels have been used in the past as a substitute for tissue folate levels or a marker for folate status over the lifetime of red blood cells, the result of this testing generally does not add to the clinical diagnosis or therapeutic plan (ASCP, 2017).

**Canadian Agency for Drugs and Technologies in Health (CADTH):** The CADTH published evidence-based guidelines that addressed the lack of clarity on the clinical utility and resource implications of folate testing, as well as the uncertainty regarding the appropriate analytical methods and clinical indications for routine folate testing.

The review concluded "There is insufficient evidence to support the clinical utility of folate testing in patients at risk of folate deficiency, particularly in folic acid fortified regions. Evidence-based guidelines provide recommendations based primarily on low quality evidence and expert consensus to support the use of folate testing in specific clinical populations. There was general agreement among several guidelines that serum folate is preferable to RBC folate; however, no evidence was identified regarding the diagnostic accuracy or comparative clinical utility of the respective assays." (CADTH, 2015).

**National Pathology Alliance:** The National Pathology Alliance benchmarking review in the UK recommended the measurement of serum folate over RBC folate (Galloway and Rushworth, 2003):

- "Evidence from the literature indicates that serum folate measurements provide equivalent information to red cell folate measurements when attempting to determine whether folate deficiency is present."

## Medicare Coverage Determinations

| | Contractor | Determination Name/Number | Revision Effective Date |
|---|---|---|---|
| NCD | National | No National Coverage Determination found | |
| LCD | Novitas Solutions, Inc. | Assays for Vitamins and Metabolic Function (L34914) | 7/1/2020 |

Note: Please review the current Medicare Policy for the most up-to-date information.
(NCD = National Coverage Determination; LCD = Local Coverage Determination)

## Coding Information

**Notes:**

1. This list of codes may not be all-inclusive since the American Medical Association (AMA) and Centers for Medicare & 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 |
|---|---|
| 82746 | Folate, Serum Testing |

# Effective Date 8/17/2024

| ICD-10-CM Diagnosis Codes | Description |
|---|---|
| D46.A | Refractory cytopenia with multilineage dysplasia |
| D46.B | Refractory cytopenia with multilineage dysplasia and ring sideroblasts |
| D46.20 | Refractory anemia with excess of blasts, unspecified |
| D46.21 | Refractory anemia with excess of blasts 1 |
| D46.4 | Refractory anemia, unspecified |
| D46.9 | Myelodysplastic syndrome, unspecified |
| D50.8 | Other iron deficiency anemias |
| D50.9 | Iron deficiency anemia, unspecified |
| D51.0 | Vitamin B12 deficiency anemia due to intrinsic factor deficiency |
| D51.1 | Vitamin B12 deficiency anemia due to selective vitamin B12 malabsorption with proteinuria |
| D51.2 | Transcobalamin II deficiency |
| D51.3 | Other dietary vitamin B12 deficiency anemia |
| D51.8 | Other vitamin B12 deficiency anemias |
| D51.9 | Vitamin B12 deficiency anemia, unspecified |
| D52.0 | Dietary folate deficiency anemia |
| D52.1 | Drug-induced folate deficiency anemia |
| D52.8 | Other folate deficiency anemias |
| D52.9 | Folate deficiency anemia, unspecified |
| D53.0 | Protein deficiency anemia |
| D53.1 | Other megaloblastic anemias, not elsewhere classified |
| D53.2 | Scorbutic anemia |
| D53.8 | Other specified nutritional anemias |
| D53.9 | Nutritional anemia, unspecified |
| D56.1 | Beta thalassemia |
| D58.2 | Other hemoglobinopathies |
| D59.4 | Other nonautoimmune hemolytic anemias |
| D59.8 | Other acquired hemolytic anemias |
| D59.9 | Acquired hemolytic anemia, unspecified |
| D61.818 | Other pancytopenia |
| D61.89 | Other specified aplastic anemias and other bone marrow failure syndromes |
| D61.9 | Aplastic anemia, unspecified |
| D69.3 | Immune thrombocytopenic purpura |
| D69.49 | Other primary thrombocytopenia |
| D69.59 | Other secondary thrombocytopenia |
| D69.6 | Thrombocytopenia, unspecified |
| D70.8 | Other neutropenia |
| D70.9 | Neutropenia, unspecified |
| D72.819 | Decreased white blood cell count, unspecified |
| E40 | Kwashiorkor |
| E42 | Marasmic kwashiorkor |
| E43 | Unspecified severe protein-calorie malnutrition |
| E44.0 | Moderate protein-calorie malnutrition |
| F02.80 | Dementia in other diseases classified elsewhere, unspecified severity, without behavioral disturbance, psychotic disturbance, mood disturbance, and anxiety |
| F02.811 | Dementia in other diseases classified elsewhere, unspecified severity, with agitation |

| ICD-10-CM Diagnosis Codes | Description |
|---|---|
| F02.818 | Dementia in other diseases classified elsewhere, unspecified severity, with other behavioral disturbance |
| F02.82 | Dementia in other diseases classified elsewhere, unspecified severity, with psychotic disturbance |
| F02.83 | Dementia in other diseases classified elsewhere, unspecified severity, with mood disturbance |
| F02.84 | Dementia in other diseases classified elsewhere, unspecified severity, with anxiety |
| F02.A0 | Dementia in other diseases classified elsewhere, mild, without behavioral disturbance, psychotic disturbance, mood disturbance, and anxiety |
| F02.A11 | Dementia in other diseases classified elsewhere, mild, with agitation |
| F02.A18 | Dementia in other diseases classified elsewhere, mild, with other behavioral disturbance |
| F02.A2 | Dementia in other diseases classified elsewhere, mild, with psychotic disturbance |
| F02.A3 | Dementia in other diseases classified elsewhere, mild, with mood disturbance |
| F02.A4 | Dementia in other diseases classified elsewhere, mild, with anxiety |
| F02.B0 | Dementia in other diseases classified elsewhere, moderate, without behavioral disturbance, psychotic disturbance, mood disturbance, and anxiety |
| F02.B11 | Dementia in other diseases classified elsewhere, moderate, with agitation |
| F02.B18 | Dementia in other diseases classified elsewhere, moderate, with other behavioral disturbance |
| F02.B2 | Dementia in other diseases classified elsewhere, moderate, with psychotic disturbance |
| F02.B3 | Dementia in other diseases classified elsewhere, moderate, with mood disturbance |
| F02.B4 | Dementia in other diseases classified elsewhere, moderate, with anxiety |
| F02.C0 | Dementia in other diseases classified elsewhere, severe, without behavioral disturbance, psychotic disturbance, mood disturbance, and anxiety |
| F02.C11 | Dementia in other diseases classified elsewhere, severe, with agitation |
| F02.C18 | Dementia in other diseases classified elsewhere, severe, with other behavioral disturbance |
| F02.C2 | Dementia in other diseases classified elsewhere, severe, with psychotic disturbance |
| F02.C3 | Dementia in other diseases classified elsewhere, severe, with mood disturbance |
| F02.C4 | Dementia in other diseases classified elsewhere, severe, with anxiety |
| F03.90 | Unspecified dementia, unspecified severity, without behavioral disturbance, psychotic disturbance, mood disturbance, and anxiety |
| F03.911 | Unspecified dementia, unspecified severity, with agitation |
| F03.918 | Unspecified dementia, unspecified severity, with other behavioral disturbance |
| F03.92 | Unspecified dementia, unspecified severity, with psychotic disturbance |
| F03.93 | Unspecified dementia, unspecified severity, with mood disturbance |
| F03.94 | Unspecified dementia, unspecified severity, with anxiety |
| F03.A0 | Unspecified dementia, mild, without behavioral disturbance, psychotic disturbance, mood disturbance, and anxiety |
| F03.A11 | Unspecified dementia, mild, with agitation |
| F03.A18 | Unspecified dementia, mild, with other behavioral disturbance |
| F03.A2 | Unspecified dementia, mild, with psychotic disturbance |
| F03.A3 | Unspecified dementia, mild, with mood disturbance |

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| ICD-10-CM Diagnosis Codes | Description |
|---|---|
| F03.A4 | Unspecified dementia, mild, with anxiety |
| F03.B0 | Unspecified dementia, moderate, without behavioral disturbance, psychotic disturbance, mood disturbance, and anxiety |
| F03.B11 | Unspecified dementia, moderate, with agitation |
| F03.B18 | Unspecified dementia, moderate, with other behavioral disturbance |
| F03.B2 | Unspecified dementia, moderate, with psychotic disturbance |
| F03.B3 | Unspecified dementia, moderate, with mood disturbance |
| F03.B4 | Unspecified dementia, moderate, with anxiety |
| F03.C0 | Unspecified dementia, severe, without behavioral disturbance, psychotic disturbance, mood disturbance, and anxiety |
| F03.C11 | Unspecified dementia, severe, with agitation |
| F03.C18 | Unspecified dementia, severe, with other behavioral disturbance |
| F03.C2 | Unspecified dementia, severe, with psychotic disturbance |
| F03.C3 | Unspecified dementia, severe, with mood disturbance |
| F03.C4 | Unspecified dementia, severe, with anxiety |
| F10.10 | Alcohol abuse, uncomplicated |
| F10.11 | Alcohol abuse, in remission |
| F10.120 | Alcohol abuse with intoxication, uncomplicated |
| F10.121 | Alcohol abuse with intoxication delirium |
| F10.129 | Alcohol abuse with intoxication, unspecified |
| F10.130 | Alcohol abuse with withdrawal, uncomplicated |
| F10.131 | Alcohol abuse with withdrawal delirium |
| F10.132 | Alcohol abuse with withdrawal with perceptual disturbance |
| F10.139 | Alcohol abuse with withdrawal, unspecified |
| F10.14 | Alcohol abuse with alcohol-induced mood disorder |
| F10.150 | Alcohol abuse with alcohol-induced psychotic disorder with delusions |
| F10.151 | Alcohol abuse with alcohol-induced psychotic disorder with hallucinations |
| F10.159 | Alcohol abuse with alcohol-induced psychotic disorder, unspecified |
| F10.180 | Alcohol abuse with alcohol-induced anxiety disorder |
| F10.181 | Alcohol abuse with alcohol-induced sexual dysfunction |
| F10.182 | Alcohol abuse with alcohol-induced sleep disorder |
| F10.188 | Alcohol abuse with other alcohol-induced disorder |
| F10.19 | Alcohol abuse with unspecified alcohol-induced disorder |
| F10.20 | Alcohol dependence, uncomplicated |
| F10.21 | Alcohol dependence, in remission |
| F10.220 | Alcohol dependence with intoxication, uncomplicated |
| F10.221 | Alcohol dependence with intoxication delirium |
| F10.229 | Alcohol dependence with intoxication, unspecified |
| F10.230 | Alcohol dependence with withdrawal, uncomplicated |
| F10.231 | Alcohol dependence with withdrawal delirium |
| F10.232 | Alcohol dependence with withdrawal with perceptual disturbance |
| F10.239 | Alcohol dependence with withdrawal, unspecified |
| F10.24 | Alcohol dependence with alcohol-induced mood disorder |
| F10.250 | Alcohol dependence with alcohol-induced psychotic disorder with delusions |
| F10.251 | Alcohol dependence with alcohol-induced psychotic disorder with hallucinations |
| F10.259 | Alcohol dependence with alcohol-induced psychotic disorder, unspecified |
| F10.26 | Alcohol dependence with alcohol-induced persisting amnestic disorder |

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| ICD-10-CM Diagnosis Codes | Description |
|---|---|
| F10.27 | Alcohol dependence with alcohol-induced persisting dementia |
| F10.280 | Alcohol dependence with alcohol-induced anxiety disorder |
| F10.281 | Alcohol dependence with alcohol-induced sexual dysfunction |
| F10.282 | Alcohol dependence with alcohol-induced sleep disorder |
| F10.288 | Alcohol dependence with other alcohol-induced disorder |
| F10.29 | Alcohol dependence with unspecified alcohol-induced disorder |
| F10.90 | Alcohol use, unspecified, uncomplicated |
| F10.91 | Alcohol use, unspecified, in remission |
| F10.920 | Alcohol use, unspecified with intoxication, uncomplicated |
| F10.921 | Alcohol use, unspecified with intoxication delirium |
| F10.929 | Alcohol use, unspecified with intoxication, unspecified |
| F10.931 | Alcohol use, unspecified with withdrawal delirium |
| F10.932 | Alcohol use, unspecified with withdrawal with perceptual disturbance |
| F10.939 | Alcohol use, unspecified with withdrawal, unspecified |
| F10.94 | Alcohol use, unspecified with alcohol-induced mood disorder |
| F10.950 | Alcohol use, unspecified with alcohol-induced psychotic disorder with delusions |
| F10.951 | Alcohol use, unspecified with alcohol-induced psychotic disorder with hallucinations |
| F10.959 | Alcohol use, unspecified with alcohol-induced psychotic disorder, unspecified |
| F10.96 | Alcohol use, unspecified with alcohol-induced persisting amnestic disorder |
| F10.97 | Alcohol use, unspecified with alcohol-induced persisting dementia |
| F10.980 | Alcohol use, unspecified with alcohol-induced anxiety disorder |
| F10.981 | Alcohol use, unspecified with alcohol-induced sexual dysfunction |
| F10.982 | Alcohol use, unspecified with alcohol-induced sleep disorder |
| F10.988 | Alcohol use, unspecified with other alcohol-induced disorder |
| F10.99 | Alcohol use, unspecified with unspecified alcohol-induced disorder |
| F50.00 | Anorexia nervosa, unspecified |
| F50.01 | Anorexia nervosa, restricting type |
| F50.02 | Anorexia nervosa, binge eating/purging type |
| F50.2 | Bulimia nervosa |
| F50.81 | Binge eating disorder |
| F50.82 | Avoidant/restrictive food intake disorder |
| F50.89 | Other specified eating disorder |
| F50.9 | Eating disorder, unspecified |
| G31.01 | Pick's disease |
| G31.09 | Other frontotemporal neurocognitive disorder |
| G31.1 | Senile degeneration of brain, not elsewhere classified |
| G31.2 | Degeneration of nervous system due to alcohol |
| G31.81 | Alpers disease |
| G31.82 | Leigh's disease |
| G31.83 | Neurocognitive disorder with Lewy bodies |
| G31.84 | Mild cognitive impairment of uncertain or unknown etiology |
| G31.85 | Corticobasal degeneration |
| G31.89 | Other specified degenerative diseases of nervous system |
| G31.9 | Degenerative disease of nervous system, unspecified |
| G60.3 | Idiopathic progressive neuropathy |
| G62.0 | Drug-induced polyneuropathy |

| ICD-10-CM Diagnosis Codes | Description |
|---|---|
| G62.1 | Alcoholic polyneuropathy |
| G62.2 | Polyneuropathy due to other toxic agents |
| G62.81 | Critical illness polyneuropathy |
| G62.82 | Radiation-induced polyneuropathy |
| G62.89 | Other specified polyneuropathies |
| G62.9 | Polyneuropathy, unspecified |
| G64 | Other disorders of peripheral nervous system |
| K50.00 | Crohn's disease of small intestine without complications |
| K50.011 | Crohn's disease of small intestine with rectal bleeding |
| K50.012 | Crohn's disease of small intestine with intestinal obstruction |
| K50.013 | Crohn's disease of small intestine with fistula |
| K50.014 | Crohn's disease of small intestine with abscess |
| K50.018 | Crohn's disease of small intestine with other complication |
| K50.019 | Crohn's disease of small intestine with unspecified complications |
| K50.10 | Crohn's disease of large intestine without complications |
| K50.111 | Crohn's disease of large intestine with rectal bleeding |
| K50.112 | Crohn's disease of large intestine with intestinal obstruction |
| K50.113 | Crohn's disease of large intestine with fistula |
| K50.114 | Crohn's disease of large intestine with abscess |
| K50.118 | Crohn's disease of large intestine with other complication |
| K50.119 | Crohn's disease of large intestine with unspecified complications |
| K50.80 | Crohn's disease of both small and large intestine without complications |
| K50.811 | Crohn's disease of both small and large intestine with rectal bleeding |
| K50.812 | Crohn's disease of both small and large intestine with intestinal obstruction |
| K50.813 | Crohn's disease of both small and large intestine with fistula |
| K50.814 | Crohn's disease of both small and large intestine with abscess |
| K50.818 | Crohn's disease of both small and large intestine with other complication |
| K50.819 | Crohn's disease of both small and large intestine with unspecified complications |
| K50.90 | Crohn's disease, unspecified, without complications |
| K50.911 | Crohn's disease, unspecified, with rectal bleeding |
| K50.912 | Crohn's disease, unspecified, with intestinal obstruction |
| K50.913 | Crohn's disease, unspecified, with fistula |
| K50.914 | Crohn's disease, unspecified, with abscess |
| K50.918 | Crohn's disease, unspecified, with other complication |
| K50.919 | Crohn's disease, unspecified, with unspecified complications |
| K70.0 | Alcoholic fatty liver |
| K70.10 | Alcoholic hepatitis without ascites |
| K70.11 | Alcoholic hepatitis with ascites |
| K70.2 | Alcoholic fibrosis and sclerosis of liver |
| K70.30 | Alcoholic cirrhosis of liver without ascites |
| K70.31 | Alcoholic cirrhosis of liver with ascites |
| K70.40 | Alcoholic hepatic failure without coma |
| K70.41 | Alcoholic hepatic failure with coma |
| K70.9 | Alcoholic liver disease, unspecified |
| K86.81 | Exocrine pancreatic insufficiency |
| K90.0 | Celiac disease |
| K90.1 | Tropical sprue |

| ICD-10-CM Diagnosis Codes | Description |
|---|---|
| K90.81 | Whipple's disease |
| K90.821 | Short bowel syndrome with colon in continuity |
| K90.822 | Short bowel syndrome without colon in continuity |
| K90.89 | Other intestinal malabsorption |
| K90.9 | Intestinal malabsorption, unspecified |
| K91.2 | Postsurgical malabsorption, not elsewhere classified |
| Q00.0 | Anencephaly |
| Q00.1 | Craniorachischisis |
| Q00.2 | Iniencephaly |
| Q01.0 | Frontal encephalocele |
| Q01.1 | Nasofrontal encephalocele |
| Q01.2 | Occipital encephalocele |
| Q01.8 | Encephalocele of other sites |
| Q01.9 | Encephalocele, unspecified |
| Q02 | Microcephaly |
| Q03.0 | Malformations of aqueduct of Sylvius |
| Q03.1 | Atresia of foramina of Magendie and Luschka |
| Q03.8 | Other congenital hydrocephalus |
| Q03.9 | Congenital hydrocephalus, unspecified |
| Q04.0 | Congenital malformations of corpus callosum |
| Q04.1 | Arhinencephaly |
| Q04.2 | Holoprosencephaly |
| Q04.3 | Other reduction deformities of brain |
| Q04.4 | Septo-optic dysplasia of brain |
| Q04.5 | Megalencephaly |
| Q04.6 | Congenital cerebral cysts |
| Q04.8 | Other specified congenital malformations of brain |
| Q04.9 | Congenital malformation of brain, unspecified |
| Q05.0 | Cervical spina bifida with hydrocephalus |
| Q05.1 | Thoracic spina bifida with hydrocephalus |
| Q05.2 | Lumbar spina bifida with hydrocephalus |
| Q05.3 | Sacral spina bifida with hydrocephalus |
| Q05.4 | Unspecified spina bifida with hydrocephalus |
| Q05.5 | Cervical spina bifida without hydrocephalus |
| Q05.6 | Thoracic spina bifida without hydrocephalus |
| Q05.7 | Lumbar spina bifida without hydrocephalus |
| Q05.8 | Sacral spina bifida without hydrocephalus |
| Q05.9 | Spina bifida, unspecified |
| Q06.0 | Amyelia |
| Q06.1 | Hypoplasia and dysplasia of spinal cord |
| Q06.2 | Diastematomyelia |
| Q06.3 | Other congenital cauda equina malformations |
| Q06.4 | Hydromyelia |
| Q06.8 | Other specified congenital malformations of spinal cord |
| Q06.9 | Congenital malformation of spinal cord, unspecified |
| Q07.00 | Arnold-Chiari syndrome without spina bifida or hydrocephalus |
| Q07.01 | Arnold-Chiari syndrome with spina bifida |

| ICD-10-CM Diagnosis Codes | Description |
|---|---|
| Q07.02 | Arnold-Chiari syndrome with hydrocephalus |
| Q07.03 | Arnold-Chiari syndrome with spina bifida and hydrocephalus |
| Q07.8 | Other specified congenital malformations of nervous system |
| Q07.9 | Congenital malformation of nervous system, unspecified |
| Z98.84 | Bariatric surgery status |

**Not Covered or Reimbursable:**

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

**Not Covered or Reimbursable:**

| CPT®* Codes | Description |
|---|---|
| 82747 | Folic Acid, RBC (Red Blood Cell) |

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

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## Revision Details

| Type of Revision | Summary of Changes | Date |
|---|---|---|
| Annual Revision | • New coverage policy. | 8/17/2024 |