

## Reimbursement Policy

### Vitamin B12 and Methylmalonic Acid Testing

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#### I. Policy Description

Vitamin B12, also known as cobalamin, is a water-soluble vitamin required for proper red blood cell formation, key metabolic processes, neurological function, and DNA regulation and synthesis. Hematologic and neuropsychiatric disorders caused by a deficiency in B12 can often be reversed by early diagnosis and prompt treatment (Oh & Brown, 2003).

Methylmalonic acid (MMA) is produced from excess methylmalonyl-CoA that accumulates when Vitamin B12 is unavailable and is considered an indicator of functional B12 deficiency (Sobczynska-Malefora et al., 2014).

Holotranscobalamin (holoTC) is the metabolically active fraction of B12 and is an emerging marker of impaired vitamin B12 status (Langan & Goodbred, 2017).

#### II. Indications and/or Limitations of Coverage

Application of coverage criteria is dependent upon an individual's benefit coverage at the time of the request. Specifications pertaining to Medicare and Medicaid can be found in the "Applicable State and Federal Regulations" section of this policy document.

- 1) Total vitamin B12 (serum cobalamin) testing **MEETS COVERAGE CRITERIA** once every three months for **any** of the following situations:
  - a) For individuals with the following signs and symptoms of vitamin B12 deficiency:
    - i) Cutaneous
      - (a) Hyperpigmentation
      - (b) Jaundice
      - (c) Vitiligo
    - ii) Gastrointestinal
      - (a) Glossitis
    - iii) Hematologic
      - (a) Anemia (macrocytic, megaloblastic)
      - (b) Leukopenia

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- (c) Pancytopenia
  - (d) Thrombocytopenia
  - (e) Thrombocytosis
- iv) Neuropsychiatric
  - (a) Areflexia
  - (b) Cognitive impairment (including dementia-like symptoms and acute psychosis)
  - (c) Gait abnormalities
  - (d) Irritability
  - (e) Loss of proprioception and vibratory sense
  - (f) Olfactory impairment
  - (g) Peripheral neuropathy
- b) For individuals undergoing treatment for vitamin B12 deficiency.
- c) For individuals with one or more of the following risk factors for vitamin B12 deficiency:
  - i) For individuals with decreased ileal absorption due to:
    - (a) Crohn's disease.
    - (b) Ileal resection.
    - (c) Tapeworm infection.
    - (d) Having undergone, or for those who have been scheduled for, bariatric procedures such as Roux-en-Y gastric bypass, sleeve gastrectomy, or biliopancreatic diversion/duodenal switch.
  - ii) For individuals with decreased intrinsic factor due to:
    - (a) Atrophic gastritis.
    - (b) Pernicious anemia.
    - (c) Postgastrectomy syndrome.
  - iii) For individuals with transcobalamin II deficiency.
  - iv) For individuals with inadequate B12 intake:
    - (a) Due to alcohol abuse.

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- (b) In individuals older than 75 years or elderly individuals being evaluated for dementia.
- (c) In vegans or strict vegetarians (including exclusively breastfed infants of vegetarian/vegan mothers).
- (d) Due to an eating disorder.
- v) For individuals with prolonged medication use:
  - (a) Histamine H2 blocker use for more than 12 months.
  - (b) Metformin use for more than four months.
  - (c) Proton pump inhibitor use for more than 12 months.
- 2) In asymptomatic high-risk individuals with low-normal levels of vitamin B12 or when vitamin B12 deficiency is suspected but the serum vitamin B12 level is normal or low-normal, methylmalonic acid testing to confirm vitamin B12 deficiency **MEETS COVERAGE CRITERIA.**
- 3) For the evaluation of inborn errors of metabolism, methylmalonic acid testing **MEETS COVERAGE CRITERIA.**
- 4) In healthy, asymptomatic individuals, screening for vitamin B12 deficiency **DOES NOT MEET COVERAGE CRITERIA.**
- 5) For the confirmation of vitamin B12 deficiency, homocysteine testing **DOES NOT MEET COVERAGE CRITERIA.**
- 6) For the screening, testing, or confirmation of vitamin B12 deficiency, holotranscobalamin testing **DOES NOT MEET COVERAGE CRITERIA.**
- 7) For all other situations not described above, total vitamin B12 (serum cobalamin) testing **DOES NOT MEET COVERAGE CRITERIA.**

### III. Applicable State and Federal Regulations

DISCLAIMER: If there is a conflict between this Policy and any relevant, applicable government policy for a particular member [e.g., Local Coverage Determinations (LCDs) or National Coverage Determinations (NCDs) for Medicare and/or state coverage for Medicaid], then the government policy will be used to make the determination. For the most up-to-date Medicare policies and coverage, please visit the Medicare search website: <https://www.cms.gov/medicare-coverage-database/search.aspx>. For the most up-to-date Medicaid policies and coverage, visit the applicable state Medicaid website.

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### Food and Drug Administration (FDA)

The FDA has cleared numerous devices including needles, reagents, instrumentation, and imaging systems for use in prostate biopsy. Many labs have developed specific tests that they must validate and perform in house. These laboratory-developed tests (LDTs) are regulated by the Centers for Medicare and Medicaid (CMS) as high-complexity tests under the Clinical Laboratory Improvement Amendments of 1988 (CLIA '88). LDTs are not approved or cleared by the U. S. Food and Drug Administration; however, FDA clearance or approval is not currently required for clinical use.

### IV. Applicable CPT/HCPCS Procedure Codes

CPT	Code Description
82607	Cyanocobalamin (Vitamin B-12)
83090	Homocysteine
83921	Organic acid, single, quantitative
84999	Unlisted chemistry procedure

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*Procedure codes appearing in Medical Policy documents are included only as a general reference tool for each policy. They may not be all-inclusive.*

### V. Evidence-based Scientific References

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