

Medical Coverage Policy | Homocysteine
Testing in the Screening, Diagnosis, and Management
of Cardiovascular Disease



EFFECTIVE DATE: 10|1|2015

POLICY LAST UPDATED: 12|06|2016

OVERVIEW

Homocysteine is an amino acid found in the blood; levels are inversely correlated with folate levels. Homocysteine has been evaluated as a potential marker of cardiovascular disease (CVD) in the general population and as a potential risk marker among people with CVD. The association between homocysteine-lowering interventions and risk of CVD has also been examined.

MEDICAL CRITERIA

Not applicable

PRIOR AUTHORIZATION

Not applicable

POLICY STATEMENT

BlueCHiP for Medicare and Commercial Products

Measurement of plasma levels of homocysteine is considered not medically necessary in the screening, evaluation, and management of patients for cardiovascular disease due to the large amount of evidence that homocysteine-lowering interventions do not improve health outcomes.

COVERAGE

Benefits may vary between groups and contracts. Please refer to the appropriate Evidence of Coverage or Subscriber Agreement for applicable not medically necessary benefits/coverage.

BACKGROUND

Homocysteine is a sulfur-containing amino acid that is rapidly oxidized in plasma into homocysteine and cysteine-homocysteine disulfide. Measurement of total plasma homocysteine is the sum of homocysteine and its oxidized forms. The laboratory test is referred to as either homocysteine or homocyst(e)ine.

Plasma levels of homocysteine have been actively researched as a risk factor for CVD, initially based on the observation that patients with hereditary homocystinuria, an inborn error of metabolism associated with high plasma levels of homocysteine, had a markedly increased risk of CVD. Subsequently, prospective epidemiologic studies were conducted to determine if an elevated plasma level of homocysteine was an independent risk factor for CVD and could be used to improve current risk prediction models.

Interest in homocysteine as a potentially modifiable risk factor has been stimulated by the epidemiologic finding that levels of homocysteine are inversely correlated with levels of folate. This finding has raised the possibility that treatment with folic acid might lower homocysteine levels and, in turn, reduce the risk of CVD. Therefore, homocysteine has potential utility both as a risk predictor and as a target of treatment. Determination of homocysteine concentration may be offered as a component of a comprehensive cardiovascular risk assessment that may include evaluation of small-density lipoproteins, subclassification of high-density lipoproteins, evaluation of lipoprotein (A), high-sensitivity C-reactive protein, and genotyping of apolipoprotein E.

Observational evidence generally supports the association of homocysteine levels with risk of CVD, especially in patients with preexisting vascular disease. However, evidence from randomized controlled trials (RCTs) does not support the hypothesis that lowering homocysteine levels by treatment with folate and/or B

vitamins improves cardiovascular outcomes. Numerous large RCTs and meta-analyses of these trials are consistent in reporting that homocysteine-lowering treatment is ineffective in reducing major cardiovascular events. Due to the large amount of evidence from placebo-controlled RCTs that homocysteine-lowering interventions do not improve health outcomes, routine testing for homocysteine in the screening, evaluation, or management of cardiovascular disease is considered not medically necessary.

CODING

The following CPT code is not medically necessary when filed with a diagnosis noted below:

83090 Assay of Homocystine

List of not medically necessary diagnosis codes:



**Homocysteine
Testing in the Screeni**

RELATED POLICIES

None

PUBLISHED

Provider Update, January 2017

Provider Update, August 2015

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