

Corporate Medical Policy

Carotid Intimal-Medial Thickness Study

File Name:	carotid_intimal_medial_thickness_study
Origination:	12/2006
Last CAP Review:	10/2011
Next CAP Review:	10/2012
Last Review:	10/2011

Description of Procedure or Service

Ultrasonographic measurement of carotid intimal-medial thickness (CIMT) refers to the use of B-mode ultrasound to determine the thickness of the two innermost layers of the carotid artery wall, the intima and the media. Detection and monitoring of intimal-medial thickening (atherosclerosis) may provide an opportunity to intervene earlier in the atherogenic disease and/or monitor disease progression.

Established major risk factors for coronary heart disease have been identified by the National Cholesterol Education Program Expert Panel. These risk factors include elevated serum levels of low-density lipoprotein (LDL) cholesterol, total cholesterol and reduced levels of high-density lipoprotein (HDL) cholesterol. Other risk factors include a history of cigarette smoking, hypertension, family history of premature coronary heart disease and age. The third report of the National Cholesterol Education Program Adult Treatment Panel establishes various treatment strategies to modify the risk of coronary heart disease, based in part on target goals of LDL cholesterol. Pathology studies have demonstrated that levels of traditional risk factors are associated with the extent and severity of atherosclerosis. However, at every level of risk factor exposure, there is substantial variation in the amount of atherosclerosis, presumably related to genetic susceptibility and the influence of other risk factors. There has been interest in identifying a technique that can measure and monitor atherosclerosis that reflects the pathogenic endpoint of coronary heart disease risk factors.

The carotid arteries can be well visualized by ultrasonography, and ultrasonographic measurements of the thickness of carotid intimal-medial (IMT) have been investigated as a technique to identify and monitor subclinical atherosclerosis.

B-mode ultrasound is most commonly used to measure carotid IMT. The intimal-medial thickness is measured and averaged over several sites in each carotid artery. Imaging of the far wall of each common carotid artery yields more accurate and reproducible IMT measurements than imaging of the near wall. Two echogenic lines are produced which represent the lumen-intima interface and the media-adventitia interface. The distance between these two lines constitutes the IMT.

******Note: This Medical Policy is complex and technical. For questions concerning the technical language and/or specific clinical indications for its use, please consult your physician.***

Policy

Carotid Intimal-Medial Thickness studies are considered investigational for all applications. BCBSNC does not provide coverage for investigational services or procedures.

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Benefits Application

This medical policy relates only to the services or supplies described herein. Please refer to the Member's Benefit Booklet for availability of benefits. Member's benefits may vary according to benefit design; therefore member benefit language should be reviewed before applying the terms of this medical policy.

When Carotid Intimal-Medial Thickness Study is covered

Not Applicable

When Carotid Intimal-Medial Thickness Study is not covered

Ultrasonographic measurement of carotid artery intimal-medial thickness (IMT) as a technique of identifying subclinical atherosclerosis is considered investigational for use in the screening, diagnosis, or management of atherosclerotic disease.

Policy Guidelines

The existing data are insufficient to determine the impact of this technology on net health outcome. At the present time there appears to be no scientific literature that directly and experimentally tests the hypothesis that measurement of CIMT results in improved patient outcomes and no specific guidance on how measurements of CIMT should be incorporated into risk assessment and risk management. Recent studies correlate increased CIMT with many other commonly used markers for risk of CHD, but do not define how its use in clinical practice improves outcomes. The National Institutes of Health Adult Treatment Panel (ATPIII) report stated that the measurement of carotid IMT theoretically could be used as an adjunct in CHD risk assessment. However, its expense, lack of availability, and difficulties with standardization precluded a recommendation for its use in routine risk assessment for the purpose of modifying intensity of LDL-lowering therapy.

The U.S. Preventive Services Task Force (USPSTF, 2009) stated that there was insufficient evidence to recommend the use of carotid intima-media thickness to screen asymptomatic individuals with no history of CHD to prevent CHD events.

The 2010 American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines indicate: "Measurement of carotid artery IMT is reasonable for cardiovascular risk assessment in asymptomatic adults at intermediate risk." The guidelines note an increased CIMT reading may be used as a guide in determining clinical treatment but evidence has not demonstrated improvements in outcomes when incorporating CIMT measurement into treatment decision-making. Additionally, the Guidelines state: "Clinical tools integrating carotid IMT within global risk scoring systems are not available. The incremental value of carotid IMT and costeffectiveness beyond that available from standard risk assessments to improve overall patient outcomes is not established." Furthermore, "serial scanning of carotid IMT is challenging in individual patients across brief time horizons due to variability in measurement in relation to the rate of disease progression and is therefore not recommended in clinical settings."

This policy was updated with a literature search using PubMed through August, 2011. The existing data are insufficient to determine the impact of this technology on net health outcome. There are three clinical trials currently utilizing CIMT to assess medical treatment efficacy.

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Billing/Coding/Physician Documentation Information

This policy may apply to the following codes. Inclusion of a code in this section does not guarantee that it will be reimbursed. For further information on reimbursement guidelines, please see Administrative Policies on the Blue Cross Blue Shield of North Carolina web site at www.bcbsnc.com. They are listed in the Category Search on the Medical Policy search page.

Applicable service codes: 0126T

CPT 93880 describes bilateral duplex scan of extracranial arteries. Because of the detailed measurement involved in calculating carotid intimal-medial thickness, providers may elect to submit these claims with a --22 modifier (unusual procedural service). In addition, linking the CPT code to the ICD-9 code V81.0 (special screening for cardiovascular disease) may help identify claims.

BCBSNC may request medical records for determination of medical necessity. When medical records are requested, letters of support and/or explanation are often useful, but are not sufficient documentation unless all specific information needed to make a medical necessity determination is included.

Scientific Background and Reference Sources

Simons PC, Algra A, Bots ML, Grobbee DE, van der Graaf Y. (August 1999). Common Carotid Intima-Media Thickness and Arterial Stiffness: Indicators of Cardiovascular Risk in High-Risk Patient The SMART Study (Second Manifestations of ARterial disease). *Circulation*. 1999;100:951-957

O'Leary DH, Polak JF, Kronmal RA, Manolio TA, Burke GL, Wolfson SK. (January 1999). Carotid-Artery Intima and Media Thickness as a Risk Factor for Myocardial Infarction and Stroke in Older Adults. *New England Journal of Medicine*. 1999;340(1):14-22

Iglesias del Sol A, Bots ML, Grobbee DE, Hofman A, Witteman JC. (June 2002). Carotid intima-media thickness at different sites: relation to incident myocardial infarction. *European Heart Journal*, 2002; 23(12):934-940

U.S. Department of Health and Human Services, National Institutes of Health, National Heart, Lung and Blood Institute. Third Report of the National Cholesterol Education Program Expert Panel on detection, evaluation, and treatment of high blood cholesterol in adults (Adult Treatment Panel III). Final Report. NIH Publication No. 02-5215. September 2002. Retrieved November 7, 2006 from <http://www.nhlbi.nih.gov/guidelines/cholesterol/atp3full.pdf>

BCBSA Medical Policy Reference Manual [Electronic Version]. 2.02.16, 8/17/05

BCBSA Medical Policy Reference Manual [Electronic Version]. 2.02.16, 6/11/09

National Institutes of Health (NIH). Third Report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III). NIH Publication No. 02-5215. September 2002. Retrieved on September 9, 2010 from <http://www.nhlbi.nih.gov/guidelines/cholesterol/atp3full.pdf>

U.S. Preventative Services Task Force. Using Nontraditional Risk Factors in Coronary Heart Disease Risk Assessment Recommendation Statement. October 2009. Retrieved on September 9, 2010 from <http://www.uspreventiveservicestaskforce.org/uspstf09/riskcoronaryhd/coronaryhdrs.htm>

Helfand M, Buckley D, Fleming C, et al. Screening for Intermediate Risk Factors for Coronary Heart Disease. U.S. Preventive Services Task Force Evidence Syntheses. Agency for Healthcare Research and Quality (US); 2009. Report No.: 10-05141-EF-1. Retrieved on September 9, 2010

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from <http://www.ncbi.nlm.nih.gov/pubmed/20722172>.

Lloyd-Jones D, Adams RJ, Brown TM, et al. American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Heart Disease and Stroke Statistics-2010 Update. A Report From the American Heart Association. *Circulation*. 2009 Dec 17. Retrieved on September 9, 2010 from <http://circ.ahajournals.org/cgi/reprint/CIRCULATIONAHA.109.192667v1>

BCBSA Medical Policy Reference Manual [Electronic Version]. 2.02.16, 7/8/10

Specialty Matched Consultant Advisory Panel review 10/2010

National Institutes of Health (NIH). Using Differences in Peripheral Blood Leukocyte Gene Expression to Determine Cardiovascular Disease Risk. Clinical Trial #NCT00613158

National Institutes of Health (NIH). Early Detection of Atherosclerosis: a Randomized Trial in the Primary Prevention of Cardiovascular Diseases. (PRIMARIA). Clinical Trial #NCT00734123

National Institutes of Health (NIH). Intima-Medial Thickness Guidance of Primary Prevention in Relatives of Patients With Early onSet Atherosclerosis (IMPRESS). Clinical Trial #NCT01330602

Greenland P, Alpert JS, Beller GA et al. 2010 ACCF/AHA guideline for assessment of cardiovascular risk in asymptomatic adults: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol* 2010; 56(25):e50-103. Retrieved on August 15, 2011 from <http://www.asnc.org/imageuploads/CV%20Risk.pdf>

BCBSA Medical Policy Reference Manual [Electronic Version]. 02.02.16, 7/14/11

Specialty Matched Consultant Advisory Panel review 10/2011

Policy Implementation/Update Information

- 12/11/06 New Policy issued. Ultrasonographic measurement of carotid artery intima-media thickness (IMT) is considered investigational as a technique of identifying and monitoring subclinical atherosclerosis. (adn)
- 11/19/07 Specialty Matched Consultant Advisory Panel review meeting 10/29/07. Policy accepted as written. (adn)

Policy renamed: Carotid Intimal-Medial Thickness Study

- 7/20/09 Policy name changed from Common Carotid Intima-Media Thickness Study to Carotid Intimal-Medial Thickness Study. Description section revised. Policy statement revised to read: "BCBSNC does not provide coverage for carotid intimal-medial thickness studies. It is considered investigational." Statement in the When Not Covered section was revised to read: "Ultrasonographic measurement of carotid artery intimal-medial thickness (IMT) as a technique of identifying subclinical atherosclerosis is considered investigational for use in the screening, diagnosis, or management of atherosclerotic disease." Coding information added to the Billing/Coding section. (adn)
- 12/7/09 Specialty Matched Consultant Advisory Panel review meeting 10/30/09. No change to policy statement.(adn)
- 6/22/10 Policy Number(s) removed (amw)

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- 11/23/10 Specialty Matched Consultant Advisory Panel review 10/2010. Policy Guidelines updated. References updated.(mco)
- 8/30/11 References updated. Policy Guidelines updated. No changes to Policy Statements. (mco)
- 11/8/11 Specialty Matched Consultant Advisory Panel review 10/2011. No changes to Policy Statements.(mco)

Medical policy is not an authorization, certification, explanation of benefits or a contract. Benefits and eligibility are determined before medical guidelines and payment guidelines are applied. Benefits are determined by the group contract and subscriber certificate that is in effect at the time services are rendered. This document is solely provided for informational purposes only and is based on research of current medical literature and review of common medical practices in the treatment and diagnosis of disease. Medical practices and knowledge are constantly changing and BCBSNC reserves the right to review and revise its medical policies periodically.