MEDICAL POLICY

MEDICAL POLICY DETAILS	
Medical Policy Title	**CORONARY CALCIUM SCORING**
Policy Number	**6.01.13**
Category	**Technology Assessment**
Effective Date	**10/18/01**
Revised Date	**02/21/02, 06/19/03, 05/19/04, 04/21/05, 02/16/06, 01/18/07, 01/17/08, 12/18/08, 01/21/10, 01/20/11, 01/19/12, 03/21/13, 01/16/14, 02/19/15, 03/17/16, 03/16/17, 02/15/18, 02/21/19, 2/20/20**
Product Disclaimer	• *If a product excludes coverage for a service, it is not covered, and medical policy criteria do not apply.* • *If a commercial product (including an Essential Plan product) or a Medicaid product covers a specific service, medical policy criteria apply to the benefit.* • *If a Medicare product covers a specific service, and there is no national or local Medicare coverage decision for the service, medical policy criteria apply to the benefit.*

POLICY STATEMENT

I. Based upon our criteria and review of the peer reviewed literature, coronary calcium scoring is considered **investigational** as a *screening* technique for asymptomatic patients.

II. Based upon our criteria and review of the peer reviewed literature, coronary calcium scoring performed as part of a cardiac computed tomographic angiography (CTA) is considered **medically appropriate** for patients who are candidates for cardiac CTA, as pre-test knowledge of extensive calcification of the coronary segment in question may diminish the interpretive value of cardiac CTA.

III. POLICY GUIDELINES

I. Coronary calcium scoring (CPT:75571) should not be reported with a CTA procedure (CPT:75572 and 75574).

II. The Federal Employees Health Benefit Program (FEHBP/FEP) requires that procedures, devices or laboratory tests approved by the U.S. Food and Drug Administration (FDA) may not be considered investigational and thus these procedures, devices or laboratory tests may be assessed only on the basis of their medical necessity.

Refer to Corporate Medical Policy #6.01.19 Low-Dose Computed (LDCT) for Lung Cancer Screening.

Refer to Corporate Medical Policy #6.01.34 Cardiac Computed Tomographic Angiography (Cardiac CTA): Contrast-Enhanced.

DESCRIPTION

Atherosclerosis of the arteries is caused by a build-up of plaque that consists of fat, cholesterol, calcium and other substances. In the coronary arteries, the calcium deposits can be measured by computed tomography (CT) which is reported as a coronary artery calcification score (CAC). The CAC score can reflect coronary artery disease (CAD) severity and can be used to assess an individual's cardiovascular risk. The higher the CAC score, the more advanced the coronary artery disease and the higher the risk for major adverse cardiovascular risks (MACE). For individuals classified as intermediate risk based on established models (e.g., ATP or Framingham risk factors), the CT calcium score may allow the individual to be reclassified to high or low-risk. For those individuals reclassified as high-risk, treatment may be changed. A CAC of 400 or more is suggested as a reasonable definition of advanced CAD. Calcium scoring is considered an integral part of CTA to determine the risk-benefit of dye infusion.

The 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) summarizes the NCEP's updated clinical

guidelines for cholesterol testing and management. The first step in management is the classification of an individual's 10 year risk or probability for coronary artery disease. Age, gender, total cholesterol, HDL cholesterol, smoking status, and systolic blood pressure are a few of the factors that are taken into account when determining risk based on established models.

RATIONALE

Published clinical evidence does not establish a clear role for detection of coronary artery calcification by CT in coronary disease *risk stratification* in asymptomatic or symptomatic patients. Studies have not shown that clinical outcomes can be improved by the use of CT-based determination of coronary artery calcification in *screening* for coronary artery disease. There is little available data to determine whether the added predictive value of calcium scores, in addition to conventional risk factors for detection of coronary artery disease, improves health outcomes.

Some studies show similar relationships between coronary artery calcification and coronary disease events. These studies are qualitatively similar to previous studies, showing some independent predictive capability of coronary artery calcium score. However, the impact of this predictive information on clinical outcomes is not known. The essential issue still remains, how to properly integrate such predictive capability into a practice guideline which can be expected to improve patient outcomes.

A Scientific Statement was published in October 2006 by the American Heart Association Committee on Cardiovascular Imaging and Intervention, Council on Cardiovascular Radiology and Intervention, Committee on Cardiac Imaging, and Council on Clinical Cardiology entitled: Assessment of Coronary Artery Disease by Cardiac Computed Tomography. This statement recommends coronary calcium assessment for: patients with chest pain, with equivocal or normal ECG's and negative cardiac enzyme studies; assessment of symptomatic patients, especially in the setting of equivocal treadmill or functional testing; and to measure atherosclerosis burden in clinically selected intermediate CD risk patients (e.g. those with a 10-20% Framingham 10-year risk assessment) to refine clinical risk prediction and to select patients for more aggressive target values for lipid-lowering therapies. This statement does not recommend coronary calcium assessment: to establish the presence of obstructive disease for subsequent revascularization; or serial imaging for assessment of progression of coronary calcification.

In the 2010 ACCF/AHA Guideline for Assessment of Cardiovascular Risk in Asymptomatic Adults; IIa recommendations for calcium scoring methods state that measurement of CAC is reasonable for cardiovascular risk assessment in asymptomatic adults at intermediate risk (10% to 20% 10-year risk). (Level of Evidence: B). The IIb recommendation states that measurement of CAC may be reasonable for cardiovascular risk assessment in persons at low to intermediate risk (6% to 10% 10-year risk). (Level of Evidence: B). No benefit was found for persons at low risk (less than 6% 10-year risk).

The ACC/AHA Guideline on the Primary Prevention of Cardiovascular Disease (2019) recommended for individuals with intermediate predicted risk (greater than or equal to 7.5% to or less than 20%) by the PCE or for select adults with borderline (5% to <7.5%) predicted risk, coronary artery calcium measurement can be a useful tool in refining risk assessment for preventive interventions (e.g., statin therapy). In these groups, coronary artery calcium measurement can reclassify risk upward (particularly if coronary artery calcium score is greater than or equal to 100 Agatston units (AU) or greater than or equal to 75th age/sex/race percentile) or downward (if coronary artery calcium is zero) in a significant proportion of individuals. The extent of reclassification is sufficient to provide confidence that borderline- or intermediate-risk patients with elevated coronary artery calcium will have event rates that clearly exceed benefit thresholds (i.e., greater than or equal to 7.5% in 10 years) and those with coronary artery calcium scores of zero will have event rates less than 7.5%, which can help guide shared decision-making about statins or potentially even aspirin. In the MESA (Multi-Ethnic Study of Atherosclerosis) trial, the coronary artery calcium score was strongly associated with 10-year ASCVD risk in a graded manner across age, sex, and racial/ethnic groups, independent of traditional risk factors. Note that the absence of coronary artery calcium does not rule out noncalcified plaque, and clinical judgment about risk should prevail. Coronary artery calcium measurement is not intended as a "screening" test for all but rather may be used as a decision aid in select adults to facilitate the clinician–patient risk discussion.(Recommendation: IIa. Level of Evidence: B).

The 2018 AHA/ACC/AACVPR/AAPA/ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/PCNA Guideline on the Management of Blood Cholesterol IIa recommendations for intermediate-risk adults or selected borderline-risk adults in whom a CAC score is measured for the purpose of making a treatment decision include the following: if the coronary calcium score is zero, it is reasonable to withhold statin therapy and reassess in five to 10 years, as long as higher risk conditions are absent (diabetes mellitus, family history of premature CHD, cigarette smoking). If CAC score is one to 99, it is reasonable to initiate statin therapy for patients greater than or equal to 55 years of age. If CAC score is 100 or higher or in the 75th percentile or higher, it is reasonable to initiate statin therapy.

The U.S. Preventive Services Task Force (USPSTF), October 2012, issued a number of findings: (1) There is insufficient evidence to determine the percentage of persons with an intermediate coronary heart disease (CHD) risk who would be reclassified by screening with nontraditional risk factors (e.g., high-sensitivity C-reactive protein (hs-CRP), ankle–brachial index (ABI), leukocyte count, fasting blood glucose level, periodontal disease, carotid intima–media thickness (carotid IMT), CAC score on electron-beam computed tomography (EBCT), homocysteine level, and lipoprotein(a) level. (2) The evidence is insufficient to determine the percentage of intermediate-risk individuals who would be reclassified by screening with nontraditional risk factors, other than hs-CRP and ABI. (3) Little evidence is available to determine the harms of using nontraditional risk factors in screening. (4) Potential harms include lifelong use of medications without proven benefit and psychological and other harms from being misclassified in a higher risk category.

The U.S. Preventive Services Task Force (USPSTF), July 2018, found (1) There is insufficient evidence to determine the balance of benefits and harms of adding the ankle-brachial index (ABI), high-sensitivity C-reactive protein (hsCRP) level, or CAC score to traditional risk assessment for cardiovascular disease (CVD) in asymptomatic adults to prevent CVD events. (2) Harms of testing for CAC score include exposure to radiation and incidental findings on computed tomography of the chest, such as pulmonary nodules, that may lead to further invasive testing and procedures. (3) Abnormal test results may lead to further testing, procedures, and lifelong medication use without proof of benefit but with expense and potential adverse effects for the patient. (4) Psychological harms may result from reclassification into a higher-risk category for CVD events.

Pre-test knowledge of extensive calcification of the coronary segment in question may diminish the interpretive value of cardiac CT angiography.

The ACCF/SCCT/ACR/AHA/ASE/ASNC/NASCI/SCAI/SCMR/STS 2013 multimodality appropriate use criteria for the detection and risk assessment of stable ischemic heart disease states that calcium scoring may be appropriate for asymptomatic individuals who have either intermediate or high global risk of coronary artery disease and uninterpretable ECG regardless of ability to exercise. The Task Force states calcium is rarely appropriate for symptomatic individuals regardless of CAD risk, ECG or exercise tolerance as well as for patients with other cardiac conditions.

CODES

- *Eligibility for reimbursement is based upon the benefits set forth in the member's subscriber contract.*
- *CODES MAY NOT BE COVERED UNDER ALL CIRCUMSTANCES. PLEASE READ THE POLICY AND GUIDELINES STATEMENTS CAREFULLY.*
- *Codes may not be all inclusive as the AMA and CMS code updates may occur more frequently than policy updates.*

CPT Codes

Code	Description
75571	Computed tomography, heart, without contrast material, with quantitative evaluation of coronary calcium

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HCPCS Codes

Code	Description
No specific codes	

ICD10 Codes

Code	Description
I25.10-I25.119	Atherosclerotic heart disease of native coronary artery (code range)

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*Key Article

KEY WORDS

Calcium scoring, helical CT, multidetector row CT, ultrafast CT.

CMS COVERAGE FOR MEDICARE PRODUCT MEMBERS

There is currently a Local Coverage Determination (LCD) for Cardiac Computed Tomography (CCT) and Coronary Computed Tomography Angiography (CCTA). Please refer to the following LCD website for Medicare Members: https://www.cms.gov/medicare-coverage-database/details/lcd-details.aspx?LCDId=33559&ver=21&CntrctrSelected=298*1&Cntrctr=298&s=41&DocType=2&bc=AAgAAAQBAAAA&