National Imaging Associates, Inc.*	
Clinical Guidelines for Coronary Artery Calcium Scoring by: Electron-Beam Tomography (EBCT) OR Non-Contrast Coronary Computed Tomography (Non-contrast CCT)	**Original Date: January 2008**
CPT Codes: 75571, S8092	**Last Revised Date: March 2021**
Guideline Number: NIA_CG_029	**Implementation Date: January 2022**

GENERAL INFORMATION

It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. All prior relevant imaging results~~,~~ and the reason that alternative imaging cannot be performed must be included in the documentation submitted.

INDICATIONS FOR CORONARY ARTERY CALCIUM (CAC) TESTING

(Arnett, 2019; Blankstein, 2017; Goff, 2014; Greenland, 2018; Hecht, 2017; Mahabadi, 2017; McClelland, 2015; Nasir, 2015; Pender, 2016; Piepoli, 2016)

- In the context of shared decision making for patients aged 40 to 75, (without clinical atherosclerotic cardiovascular disease), with intermediate-to-low 10-year risk (5 - 20%), with documentation that the CAC score is necessary to adjust management, such as statin therapy (Hecht, 2017; Michos, 2017; Stone, 2013; Wilkins, 2018)

- Patients who are over 75 or younger than 40 years old can be considered for CAC testing when there is well-documented evidence that the results could alter management (Tota-Maharaj, 2012)

    - Patients with estimated 10-year risk of less than 5%, but are suspected to be at elevated atherosclerotic cardiovascular disease (ASCVD) risk because of a major risk factor not accounted for in the global risk equations, such as family history of premature CAD (Greenland, 2018; Hecht, 2017)

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1— Electron Beam ~~C~~Tomography

- Patients in whom statin therapy is indicated, but have intolerable adverse effects from, or are reluctant to take statin medication, in order to guide the need for alternative lipid-lowering strategies (Blankstein, 2017; Michos, 2017; Nasir, 2015)

- CAC testing may be repeated for risk re-assessment after a minimum of 5 years, if documentation indicates it will alter management (Greenland, 2018; Hecht, 2017; Michos, 2017). It should not be repeated if the patient already has two CAC Scores of zero 5 years apart or has a score ≥ 400 (Greenland, 2018)

BACKGROUND
(Blankstein, 2017; Greenland, 2018; Hecht, 2017)

Coronary artery calcium (CAC) testing is a cardiovascular risk assessment tool, applicable only to the patient without known cardiovascular disease, for the purpose of primary prevention. It is not for the patient with suspected or known cardiovascular disease, coronary or otherwise, who already requires aggressive risk factor modification.

CAC testing, by either EBCT or non-contrast CCT, provides a quantitative assessment of coronary artery calcium content in Agatston units, as an adjunct to the estimation of global risk for coronary or cardiovascular events over the next 10 years (McClelland 2015). A CAC Score > 0 is a highly specific feature of coronary atherosclerosis.

CAC score > 100 can also provide support for aspirin therapy (Hecht, 2017; Miedema, 2014) and statin therapy (Mortenen, 2018).

Patients who have already manifested cardiovascular **disease** are already at high global risk and the Global Cardiovascular Risk Calculators are not applicable.

Links to Global Cardiovascular Risk Calculators
(Arnett, 2019; D'Agostino, 2008; Goff, 2014; McClelland, 2015; Ridker, 2007)

Risk Calculator	Website for Online Calculator
Framingham Cardiovascular Risk	https://reference.medscape.com/calculator/framingham-cardiovascular-disease-risk
Reynolds Risk Score Can use if no diabetes Unique for use of family history	http://www.reynoldsriskscore.org/
Pooled Cohort Equation	http://clincalc.com/Cardiology/ASCVD/PooledCohort.aspx?example

ACC/AHA Risk Calculator	http://tools.acc.org/ASCVD-Risk-Estimator/

Risk Tiers:

- **Low <** 10%.
- **Moderate** = 10% - 20%.
- **High risk ≥** 20%.

Abbreviations

ASCVD	Atherosclerotic cardiovascular disease
CAC	Coronary artery calcium
CAD	Coronary artery disease
CCT	Cardiac computed tomography
EBCT	Electron beam computed tomography

POLICY HISTORY

Date	Summary
March 2021	No changes
March 2020	• Added general information section as Introduction which outlines requirements for documentation of pertinent office notes by a licensed clinician, and inclusion of laboratory testing and relevant imaging results for case review • Updated and added new references
July 2019	• Repeat CAC testing indication revised as follows: It should not be repeated if the patient has already had two CAC Scores of zero 5 years apart added clause 'or has a score ≥ 400.' • For patients with estimated 10-year risk of less than 5% but are suspected to be at elevated atherosclerotic cardiovascular disease (ASCVD) risk because of a major risk factor not accounted for in the global risk equations, only family history of premature CAD was included as an example.

~~July 22, 2019~~

- ~~Repeat CAC testing indication revised as follows: It should not be repeated if the patient has already had two CAC Scores of zero 5 years apart added clause 'or has a score ≥ 400.'~~
- ~~For patients with estimated 10-year risk of less than 5% but are suspected to be at elevated atherosclerotic cardiovascular disease (ASCVD) risk because of a major risk factor not accounted for in the global risk equations, only family history of premature CAD was included as an example.~~

~~March 2020~~

- ~~Added general information section as Introduction which outlines requirements for documentation of pertinent office notes by a licensed clinician, and inclusion of laboratory testing and relevant imaging results for case review~~
- ~~Updated and added new references~~

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Reviewed / Approved by NIA Clinical Guideline Committee

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