

MEDICAL POLICY

Medical Policy Title	Cardiac Computed Tomography (CCT) /Coronary Computed Tomographic Angiography (CCTA)
Policy Number	6.01.34
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Our medical policies are guides to evaluate technologies or services for medical necessity. Criteria are established through the assessment of evidence based, peer-reviewed scientific literature, and national professional guidelines. Federal and state law(s), regulatory mandates and the member's subscriber contract language are considered first in the determination of a covered service.

(Link to [Product Disclaimer](#))

POLICY STATEMENT(S)

- I. Coronary computed tomographic angiography (CCTA), is considered **medically appropriate** for **ANY** of the following:
 - A. For new, recurrent or worsening cardiac chest pain as defined by chest, epigastric, shoulder, arm/jaw pain, chest pressure/discomfort;
 - B. For new, recurrent or worsening symptoms of chest pain, unexplained exertional dyspnea, or unexplained exertional fatigue and **any** of the following:
 1. Symptoms persist after a normal stress test;
 2. Equivocal, borderline, abnormal or discordant prior noninvasive evaluation since the onset of symptoms where obstructive coronary artery disease (CAD) remains a concern;
 3. New abnormal rest electrocardiogram (ECG) findings since the onset of symptoms, such as a new left bundle branch block (LBBB), or T-wave inversions (not including isolated T wave inversion in III or leads v1-2), when ischemia is a concern;
 4. A prior history of coronary artery bypass graft (CABG) when the only concern is for graft patency;
 5. Individual has undergone an urgent evaluation (ER or urgent care) of the symptoms since the onset;
 6. History of cardiac transplant (e.g., concern for transplant vasculopathy);
 7. Chest pain occurring with syncope;
 8. History of chest radiation;
 9. Coronary artery calcium (CAC) score greater than 100; **or**
 10. 50 years or older with **two (2) or more** of the following cardiovascular risk factors:
 - a. diabetes mellitus;
 - b. current cigarette smoking;

Medical Policy: Cardiac Computed Tomography (CCT)/Coronary Computed Tomographic Angiography (CCTA)

Policy Number: 6.01.34

Page: 2 of 22

- c. family history of premature coronary artery disease (CAD);
 - d. hypertension;
 - e. hyperlipidemia; **or**
 - f. history of adverse pregnancy outcomes.
- C. Prior history of percutaneous coronary intervention (PCI) or coronary artery bypass graft (CABG) surgery or a history of obstructive CAD and **any** of the following:
 - 1. Cardiac chest pain;
 - 2. Anginal equivalents such as atypical chest pain, exertional dyspnea or exertional fatigue; **or**
 - 3. Symptoms similar to prior ischemic episodes.
- D. Evaluation of an individual under 40 years of age for suspected anomalous coronary artery(ies) or for the treatment planning when there is a history of **one (1) or more** of the following:
 - 1. Syncope episodes during strenuous activities;
 - 2. Persistent chest pain brought on by exertion or emotional stress, and normal stress test;
 - 3. Full sibling(s) with history of sudden death syndrome before age 40 or with documented anomalous coronary artery;
 - 4. Resuscitated sudden death and contraindications for conventional coronary angiography; **or**
 - 5. Prior nondiagnostic coronary angiography in determining the course of anomalous coronary artery in relation to the great vessels, origin of a coronary artery, or bypass graft location, for **any** of the following:
 - a. anomalies of origin:
 - i. left coronary artery (LCA) or the right coronary artery (RCA) arising from the pulmonary artery; **or**
 - ii. interarterial course between the pulmonary artery and the aorta of either the RCA arising from the left sinus of the Valsalva or the LCA arising from the right sinus of Valsalva;
 - b. anomalies of course:
 - i. myocardial bridging; **or**
 - c. anomalies of termination:
 - i. coronary artery fistula.
- E. Initial imaging study for individuals with hypertrophic cardiomyopathy and stable anginal

Medical Policy: Cardiac Computed Tomography (CCT)/Coronary Computed Tomographic Angiography (CCTA)

Policy Number: 6.01.34

Page: 3 of 22

symptoms;

- F. Individuals who have recovered from unexplained sudden cardiac arrest in lieu of invasive coronary angiography when **both** of the following are determined:
 - 1. Confirm the presence or absence of ischemic heart disease; **and**
 - 2. Exclude the presence of an anomalous coronary artery;
- G. Evaluation of newly diagnosed congestive heart failure or cardiomyopathy with **all** of the following:
 - 1. No prior history of coronary artery disease, the ejection fraction is less than 50%, and low or intermediate risk on the pre-test probability assessment;
 - 2. No contraindications to cardiac CT angiography; **and**
 - 3. No cardiac catheterization, single-photon emission CT (SPECT), cardiac positron emission tomography (PET), or stress echocardiogram has been performed since the diagnosis of congestive heart failure or cardiomyopathy;
- H. Unclear coronary artery anatomy despite conventional cardiac catheterization;
- I. Evaluation of structural heart disease for the use of class IC antiarrhythmic agent (flecainide or propafenone) in lieu of stress test with imaging;
- J. Ventricular tachycardia (VT) (3-beat runs or greater), exercise induced VT or Ventricular fibrillation (VF);
- K. Re-do coronary artery bypass grafting (CABG) for **either** of the following:
 - 1. Assess bypass graft patency; **or**
 - 2. To evaluate the location of the left internal mammary artery (LIMA) and/or right internal mammary artery (RIMA) prior to repeat bypass surgery;
- L. To evaluate left main stent one time at six (6) to twelve (12) months;
- M. Pre-procedural planning for PCI of Chronic Total Occlusion (CTO);
- N. To evaluate coronary artery anomalies and other complex congenital heart diseases of cardiac chambers or great vessels;
- O. Cardiac CTA will replace conventional invasive coronary angiography for **either** of the following indications:
 - 1. Delayed presentation or retrospective evaluation of suspected Takotsubo syndrome (stress cardiomyopathy); **or**
 - 2. Preoperative assessment of the coronary arteries in planned surgery for **any** of the following:
 - a. aortic dissection;

Medical Policy: Cardiac Computed Tomography (CCT)/Coronary Computed Tomographic Angiography (CCTA)

Policy Number: 6.01.34

Page: 4 of 22

- b. aortic aneurysm;
 - c. valvular surgery; **or**
 - d. liver transplant (for initial pre-treatment evaluation and may be repeated once in three (3) years);
- P. To assess coronary involvement in individuals with systemic vasculitis (e.g., Giant Cell Arteritis, Takayasu's, Kawasaki's disease) when there are clinical features suggestive of underlying vasculitis including **any** of the following:
 - 1. Unexplained elevated cardiac markers (erythrocyte sedimentation rate, C-reactive protein).
 - 2. Constitutional symptoms (fevers, chills, night sweats, weight loss); **or**
 - 3. Multiple visceral infarcts in the absence of embolic etiology;
- Q. Cardiac trauma;
- R. Preoperative assessment for planned liver or kidney transplant for the following indication:
 - 1. In place of stress testing with imaging for high-risk or intermediate-risk surgery as follows:
 - a. High-risk surgery: All individuals in this category should receive an imaging stress test if there has not been an imaging stress test within one (1) year unless the individual has developed new cardiac symptoms or a new change in the ECG since the last stress test.
 - b. Intermediate-risk surgery: One or more clinical risk factors and unable to perform an ETT if there has not been an imaging stress test within one (1) year unless the individual has developed new cardiac symptoms or a new change in the EKG since the last stress test.
 - i. Clinical risk factors (for cardiac death and non-fatal MI at time of non-cardiac surgery)
 - a) History of ischemic heart disease (previous MI, previous positive stress test, use of nitroglycerin, typical angina, ECG Q waves, previous PCI or CABG);
 - b) History of compensated previous congestive heart failure (history of heart failure, previous pulmonary edema, third heart sound, bilateral fine crackles, chest x-ray showing heart failure);
 - c) History or previous TIA or stroke;
 - d) Diabetes mellitus;
 - e) Creatinine level greater than 2mg/dl.

Medical Policy: Cardiac Computed Tomography (CCT)/Coronary Computed Tomographic Angiography (CCTA)

Policy Number: 6.01.34

Page: 5 of 22

Fractional Flow Reserve by CT (FFR-CT)

- II. Noninvasive FFR-CT is considered **medically appropriate** to further assess CAD seen on a recent coronary CTA that is of uncertain physiologic significance.

Coronary CTA Plaque Quantification

- III. Coronary CT plaque quantification or coronary plaque analysis using data from CCTA is **medically necessary** when **ALL** of the following conditions exist:
- A. The individual has acute or stable chest pain with no known coronary artery disease (CAD);
 - B. Results from the current completed and interpreted CCTA indicate **any** of the following risk categories:
 - 1. Intermediate risk;
 - 2. CAD-RADS 1;
 - 3. CAD-RADS 2; **or**
 - 4. CAD-RADS 3;
 - C. Cardiac evaluation is negative or inconclusive for acute coronary syndrome non-indications.
- IV. Coronary CTA plaque quantification or coronary plaque analysis using data from CCTA is **not medically necessary** in **ANY** of the following clinical scenarios:
- A. Unstable coronary syndromes;
 - B. In conjunction with invasive coronary catheterization;
 - C. For the purpose of screening or disease surveillance;
 - D. Within 30 days of a myocardial infarction;
 - E. Current completed and interpreted CCTA documents with **any** of the following results:
 - 1. Normal CCTA;
 - 2. CAD-RADS-0;
 - 3. High-grade stenosis (>70%);
 - 4. CAD-RADS 4; **or**
 - 5. CAD-RADS 5.

CT Heart for Evaluation of Cardiac Structure and Morphology

- V. CT of the heart is considered **medically appropriate** for the evaluation of cardiac structure and morphology for **ANY** of the following:
- A. Cardiac vein identification for lead placement in left ventricular pacing;
 - B. Evaluation of the anatomy of the pulmonary veins prior to a pulmonary vein isolation

Medical Policy: Cardiac Computed Tomography (CCT)/Coronary Computed Tomographic Angiography (CCTA)

Policy Number: 6.01.34

Page: 6 of 22

(ablation) procedure for atrial fibrillation (post-procedure between 3-6 months after ablation);

- C. If echocardiogram was performed and is inconclusive for **all** of the following:
 - 1. Cardiac or pericardial mass or tumor;
 - 2. Cardiac thrombus;
 - 3. Pericarditis or constrictive pericarditis; **and**
 - 4. Complications of cardiac surgery;
- D. In place of magnetic resonance imaging (MRI) when there is clinical suspicion supported by established criteria for arrhythmogenic right ventricular dysplasia (ARVD) of **any** of the following:
 - 1. Suspected ARVD; **or**
 - 2. Arrhythmogenic ventricular cardiomyopathy (ARVC) with presyncope or syncope;
- E. Recurrent laryngeal nerve palsy due to cardiac chamber enlargement;
- F. Prior to planned valvular interventions (e.g., transcatheter valve replacements) in patients with radiation-induced valve disease;
- G. In place of transesophageal echocardiogram (TEE) for assessment of left atrial appendage (LAA) occlusion device or to assess for thrombus for **any** of the following:
 - 1. Pre-procedural evaluation;
 - 2. Repeat imaging 45 days post-procedure;
 - a. Another follow-up study is medically necessary before the one (1) year surveillance when imaging study at 45 days shows a peri-device gap greater or equal to 5mm or device related thrombus, usually at 3-6 months; **or**
 - 3. One (1) year post procedure.

CT Heart for Congenital Heart Disease

- VI. CT of the heart for congenital heart disease is considered **medically appropriate** for **ANY** of the following:
 - A. Coronary artery anomaly evaluation, when a cardiac catheterization was performed, and not all coronary arteries were identified;
 - B. Thoracic arteriovenous anomaly evaluation, when a cardiac MRI or chest CT angiogram was performed and suggested congenital heart disease;
 - C. Complex adult congenital heart disease evaluation, for **either** of the following:
 - 1. There was not a cardiac CT or cardiac MRI performed, and there is a contraindication to cardiac MRI; **or**

Medical Policy: Cardiac Computed Tomography (CCT)/Coronary Computed Tomographic Angiography (CCTA)

Policy Number: 6.01.34

Page: 7 of 22

2. A cardiac CT or cardiac MRI was performed one (1) or more years ago.

CT Imaging for Transcatheter Aortic Valve Replacement (TAVR)

VII. The following imaging is **medically appropriate** for pre-aortic valve replacement to determine if the individual is a candidate for TAVR with **ANY** of the following:

- A. CTA Chest, Abdomen and Pelvis;
- B. Cardiac CT to measure the aortic annulus;
- C. Coronary CTA to measure the aortic annulus and assess the coronary arteries in lieu of heart catheterization.

VIII. Cardiac CT Post-TAVR is considered **medically appropriate** for **ANY** of the following:

- A. Post-TAVR Transthoracic Echocardiography (TTEs) is indeterminate or raises concerns about **any** of the following:
 1. Valve thrombosis;
 2. Infective endocarditis; **or**
 3. Structural degeneration;
- B. When a valve in valve implantation or surgical re-do AVR is being contemplated.

IX. Cardiac CT for routine surveillance or follow up post-TAVR, for incidental hypoattenuated leaflet thickening (HALT) with or without restricted leaflet motion, also known as hypoattenuation Affecting Motion (HAM) is considered **not medically necessary**.

X. Cardiac CTA is considered **investigational** for all other indications.

RELATED POLICIES

Corporate Medical Policy

6.01.13 Coronary Calcium Scoring

11.01.03 Experimental or Investigational Services

11.01.10 Clinical Trials

POLICY GUIDELINE(S)

- I. Evidence documenting the presence of obstructive CAD includes **ANY** of the following:
 - A. Prior heart catheterization or CCTA revealing **any** of the following:
 1. $\geq 40\%$ stenosis of the left main coronary artery;
 2. $\geq 50\%$ stenosis for other major epicardial vessels;
 3. Significant stenosis defined by and FFR of ≤ 0.80 ; **or**

Medical Policy: Cardiac Computed Tomography (CCT)/Coronary Computed Tomographic Angiography (CCTA)

Policy Number: 6.01.34

Page: 8 of 22

4. History of a prior PCI or CABG.
- II. Evidence documenting the presence of non-obstructive CAD includes prior heart catheterization or CCTA revealing **ANY** of the following:
 - A. <40% stenosis of the left main coronary artery;
 - B. <50% stenosis for other major epicardial vessels;
 - C. FFR >0.80.
- III. The Coronary Artery Disease Reporting and Data System (CAD-RADS) classification of percentage luminal diameter coronary artery stenosis on coronary CT angiography (CCTA) is as follows:
 - A. CAD-RADS 0: 0%
 - B. CAD-RADS 1: 1 to 24%
 - C. CAD-RADS 2: 25 to 49%
 - D. CAD-RADS 3: 50 to 69%
 - E. CAD-RADS 4: 70 to 99% or $\geq 50\%$ left main coronary artery stenosis
 - F. CAD-RADS 5: 100% (total occlusion)
- IV. The Diamond Forrester pre-test probability of CAD is a statistical tool used in the initial assessment of stable chest pain syndromes to estimate the likelihood that the symptoms are caused by obstructive coronary artery disease using the individual's description of the symptoms, their age, and sex assigned at birth. Link to calculator: [accessed 2026 May 13] Available from: https://qxmd.com/calculate/calculator_32/pretest-probability-of-cad

DESCRIPTION

Ischemic Evaluation Symptoms

- Likely anginal symptoms (angina pectoris, typical angina, cardiac chest pain)
 - o Chest, epigastric, shoulder, arm, jaw pain, chest pressure/discomfort occurring with exertion or emotional stress which is relieved by rest, nitroglycerin, or both.
- Less likely anginal symptoms
 - o Symptoms including dyspnea or fatigue when not exertional and not relieved by rest/nitroglycerin; also includes generalized fatigue or chest discomfort occurring in a time course not suggestive of angina (e.g., resolves spontaneously within seconds or lasts for an extended period and is unrelated to exertion).
- Non-cardiac explanation
 - o An alternative diagnosis, such as gastroesophageal reflux, chest trauma, anemia, chronic obstructive pulmonary disease, or pleurisy, is present and is the most likely explanation for

Medical Policy: Cardiac Computed Tomography (CCT)/Coronary Computed Tomographic Angiography (CCTA)

Policy Number: 6.01.34

Page: 9 of 22

the patient's symptoms.

- Anginal equivalents (individuals with previously documented CAD only)
 - o Symptoms consistent with individual's known angina pattern in an individual with a history of CABG or PCI.
 - o Fatigue (overwhelming sense of exhaustion causing a decreased capacity for physical activity or mental work).

Other Signs and Symptoms Suggestive of Potential Cardiac Etiology

- Dyspnea;
- Orthopnea;
- Paroxysmal nocturnal dyspnea;
- Heartburn unrelated to meals/nausea and vomiting;
- Palpitations;
- Syncope;
- Heart failure.

Computed Tomographic Angiography (CCTA)

CTA is a non-invasive imaging test that requires the use of intravenously administered contrast material and high-resolution, high-speed CT machinery to obtain detailed volumetric images of blood vessels. CTA can be applied to image blood vessels throughout the body; however, to apply CTA in the coronary arteries, several technical challenges must be overcome, to obtain high-quality diagnostic images. Short image acquisition times are necessary, to avoid blurring artifacts from the rapid motion of the beating heart. In some cases, premedication with beta-blocking agents is used to slow the heart rate below 60-65 beats per minute, to facilitate adequate scanning, and electrocardiographic triggering or retrospective gating is used to obtain images during diastole when motion is reduced. Rapid scanning is also helpful, so that the volume of cardiac images can be obtained during breath-holding. Very thin sections (less than 1 mm) are important to provide adequate spatial resolution and high-quality three-dimensional reconstruction images.

Cardiac CTA has been proposed as a noninvasive alternative to invasive coronary angiography (ICA). Applications include, but are not limited to, evaluation of obstructive coronary artery disease (CAD), coronary artery bypass graft patency, coronary artery stent patency, coronary artery aneurysm, delineation of coronary artery anomaly, and functional cardiac assessment.

Fractional flow reserve (FFR) is the ratio between the maximum blood flow in a narrowed artery and the maximum blood flow in a normal artery. The HeartFlow FFRCT (HeartFlow, Inc., Redwood City, CA) is coronary physiologic simulation software that has been approved by the U.S. Food and Drug Administration (FDA) to provide a non-invasive method of estimating FFR using standard CCTA image data.

Medical Policy: Cardiac Computed Tomography (CCT)/Coronary Computed Tomographic Angiography (CCTA)

Policy Number: 6.01.34

Page: 10 of 22

Automated quantification and characterization of coronary atherosclerotic plaque is a service in which coronary computed tomographic angiography (CCTA) data are analyzed using computerized algorithms to assess the extent and severity of coronary artery disease.

SUPPORTIVE LITERATURE

Rinehart et al (2024) reported the results of the DECODE study. The study evaluated the clinical utility of HeartFlow's Artificial Intelligence Plaque Analysis (AI-QCPA) tool, and the effects it has on clinical decision making. This retrospective study involved 100 patients and evaluated their coronary CT angiography (CCTA) scans that were used to create initial treatment plans. Results showed that after reviewing AI-generated plaque quantification data, reclassification rate (RR) occurred in 66% of patients, RR ranged from 47% in cases with CACS 0 to 96% in cases with CACS >400, and from 40% in CAD-RADS 1 cases to 94% in CAD-RADS 4 cases. RR was higher in cases with coronary stenoses $\geq 50\%$ (89.5%) vs cases with stenoses $< 50\%$. RR was 39% in cases with < 70 mg/dl vs 60% in LDL ≥ 70 mg/dl. Following the review of the CCTA images rather than the CCTA report, the RR was 50%. The finding showed that the incorporation of AI-QCPA information into CCTA reporting has the potential to better align treatment strategies with patient risk.

Barbosa et al (2023) conducted a systematic review and meta-analysis that compared effectiveness of CCTA with the standard of care (SOC) in patients with acute chest pain. Twenty-two randomized control trials (RCTs) were included (n=4956 patients who underwent CCTA, n=4423 patients who received SOC). Results reported that there was a 14% reduction in the length of stay and a 17% reduction in immediate costs for the CCTA arm compared with the SOC arm. In group 1, the length of stay was 17% shorter and costs were 21% lower using CCTA. There was no evidence of differences in referrals to invasive coronary angiography, myocardial infarction, mortality, rate of hospitalization, further stress testing, or readmissions between CCTA and SOC arms. There were more revascularizations (relative risk, 1.45) and medication changes (relative risk, 1.33) in participants with low-to-intermediate acute coronary syndrome risk and increased radiation exposure in high-risk participants (mean difference, 7.24 mSv) in the CCTA arm compared with the SOC arm. The meta-regression analysis found significant differences between CCTA and SOC arms for rate of hospitalization, further stress testing, and medication changes depending on the type of SOC. Authors support the use of CCTA as it is safe, fast and less expensive in short-term to exclude ACS in low- to intermediate patients presenting with acute chest pain.

Gray et al (2021) conducted an open-label RCT to determine if the use of early CCTA improves one-year clinical outcomes in 1748 intermediate-risk patients with suspected acute coronary syndrome (ACS). Participants were randomized into two groups, receive early CCTA (n=877) and SOC (n=871). The primary endpoint was all cause death or subsequent type 1 or 4b Myocardial infarction (MI) at 1 year, and it occurred in 51 (5.8%) patients in the early CCTA group compared with 53 (6.1%) patients in the SOC group. The authors stated that the findings did not support the routine use of early CCTA in intermediate risk patients with acute chest pain and suspected ACS.

Smulders et al (2020) published a 3-arm, prospective, open-label RCT that compared cardiovascular magnetic resonance imaging (CMR) or CCTA as a gatekeeper for ICA with a control strategy (i.e.,

Medical Policy: Cardiac Computed Tomography (CCT)/Coronary Computed Tomographic Angiography (CCTA)

Policy Number: 6.01.34

Page: 11 of 22

routine clinical care) in 207 patients with non-ST-segment elevation myocardial infarction (NSTEMI). The CMR- and CTA-first strategies reduced ICA compared with routine clinical care (87%, 66%, and 100%, respectively), with similar outcome (hazard ratio: CMR vs. routine, 0.78; CTA vs. routine, 0.66; and CMR vs. CTA, 1.19). Obstructive coronary artery disease after ICA was found in 61% of patients in the routine clinical care arm, in 69% in the CMR-first arm, and in 85% in the CTA-first arm. In the non-CMR and non-CTA arms, follow-up CMR and CTA were performed in 67% and 13% of patients and led to a new diagnosis in 33% and 3%, respectively. The authors reported that implementing CMR or CTA first when diagnosing non-ST-segment elevation MI is a safe gatekeeper. This was a single-center study and the authors state that it requires validation in a multicenter setup.

Maurovich-Horvat et al (2022) reported the results of the Diagnostic Imaging Strategies for Patients with Stable Chest Pain and Intermediate Risk of Coronary Artery Disease (DISCHARGE) trial. It is a randomized trial comparing CT with ICA as initial diagnostic imaging strategies to guide treatment in patients with stable chest pain who have the probability of obstructive CAD. The primary outcome was major adverse cardiovascular events (cardiovascular death, nonfatal myocardial infarction, or nonfatal stroke) over 3.5 years. Key secondary outcomes were procedure related complications and angina pectoris. The trial had 3561 patients with follow-up completed in 3523 of them. Major adverse cardiovascular events occurred in 38 of the 1808 patients (21%) in the CT group, and in 52 of 1753 (3.0%) in the ICA group. Angina in the final 4 weeks of follow-up was reported in 8.8% of patients in the CT group and in 7.5% of those in the ICA group.

Stillman et al (2020) reported results from the Randomized Evaluation of Patients with Stable Angina Comparing Utilization of Noninvasive Examinations (RESCUE) trial. The trial randomized 1050 patients from 44 sites with stable angina and suspected CAD. Participants were randomized to CCTA (n=518) or single photon emission CT myocardial perfusion imaging (SPECT-MPI) (n=532) to direct patients to optimal medical therapy alone or optimal medical therapy with revascularization. The primary endpoint was first major adverse cardiovascular events (MACE) (cardiac death or MI), or revascularization. Study has a mean follow-up period of 16.2 months. In patients with a negative CCTA there was one acute MI; in patients with a negative SPECT examination there were two acute MIs; and for positive CCTA and SPECT, one acute MI each. CCTA segment involvement by a stenosis of $\geq 50\%$ diameter was a better predictor of MACE and revascularization at 1 year than the percent reversible defect size by SPECT myocardial perfusion imaging. Four (1.2%) patients with negative CCTA compared with 14 (3.2%) with negative SPECT had MACE or revascularization. The authors concluded that CCTA was a better predictor of MACE and revascularization. Limitations to the study include modest adherence rates to optimal medical therapy (OMT), follow-up time was modest, and decreased sample size.

Hong et al (2021) conducted a multicenter, randomized trial. The study was to evaluate whether the success rate of percutaneous coronary intervention (PCI) for total occlusion (CTO) increased with pre-procedural CCTA. A total of 400 individuals with CTO were randomized to receive PCI with pre-procedural CCTA or without CCTA. Successful recanalization was achieved in 187 patients (93.5%) in the coronary CTA-guided group and in 168 patients (84.0%) in the angiography-guided group. Coronary perforations occurred in 2 (1%) and 8 patients (4%) in the coronary CTA- and angiography-guided groups, respectively. Periprocedural myocardial infarction was not observed in

Medical Policy: Cardiac Computed Tomography (CCT)/Coronary Computed Tomographic Angiography (CCTA)

Policy Number: 6.01.34

Page: 12 of 22

the coronary CTA–guided group, whereas it occurred in 4 patients (2%) in the angiography-guided group. Total procedure and fluoroscopic times were not different. There were no differences between the groups in the occurrences of cardiac death, target vessel–related myocardial infarction, or target vessel revascularization at 1 year.

Hoffman et al (2017) evaluated the results from the prospective, randomized, multicenter PROMISE trial which assessed the prognostic value of noninvasive cardiovascular testing in patients with stable chest pain. The authors recognize the lack of data from randomized trials comparing anatomic with functional testing for determining optimal management of patients with stable chest pain. In the PROMISE trial, patients with stable chest pain and intermediate pretest probability for obstructive CAD were randomly assigned to functional testing (exercise electrocardiography, nuclear stress, or stress echocardiography) or CCTA. The primary end point was death, myocardial infarction, or unstable angina hospitalizations over a median follow-up of 26.1 months. The frequency of normal test results and incidence rate of events in these patients were significantly lower among 4500 patients randomly assigned to CTA in comparison with 4602 patients randomly assigned to functional testing. In CTA, 54.0% of events (n=74/137) occurred in patients with non-obstructive CAD (1%-69% stenosis). The frequency of obstructive CAD and myocardial ischemia was low (11.9% versus 12.7%, respectively), with both findings having similar prognostic value (95% CI, 2.60-5.39; and 3.47; 95% CI, 2.42-4.99). When test findings were stratified as mildly, moderately, or severely abnormal, hazard ratios for events in comparison with normal tests increased proportionally for CTA (2.94, 7.67, 10.13) but not for corresponding functional testing categories (0.94, 2.65, 3.88). They found that anatomic assessment with CCTA provided significantly better prognostic information compared to function testing. They noted that adding the Framingham Risk Score to functional test results significantly improved the prognostic value of functional testing. If 2714 patients with at least an intermediate Framingham Risk Score (>10%) who had a normal functional test were reclassified as being mildly abnormal, the discriminatory capacity improved to 0.69 (95% CI, 0.64-0.74). The authors stated that contemporary stable chest pain populations present with a low prevalence of myocardial ischemia and obstructive CAD, and CCTA in that population provides better prognostic information than functional testing. In addition, the authors concluded that in this population, the detection of non-obstructive CAD identifies additional at-risk patients while consideration of the Framingham Risk Score is important for proper risk stratification of patients with normal stress testing.

PROFESSIONAL GUIDELINE(S)

The Society of Cardiovascular Computed Tomography issued an expert consensus document in 2021 recommending CCTA for the following:

- Evaluation of stable coronary artery disease:
 - o Native vessels
 - o Post revascularization
 - o Fractional flow reserve or CT myocardial perfusion imaging

Medical Policy: Cardiac Computed Tomography (CCT)/Coronary Computed Tomographic Angiography (CCTA)

Policy Number: 6.01.34

Page: 13 of 22

- o Coronary anomalies
- o Artery evaluation prior to noncoronary cardiac surgery.

The guidelines for the Evaluation and Diagnosis of Chest Pain: A Report of the American College of Cardiology (ACC)/American Heart Association (AHA) Joint Committee on clinical Practice Guidelines (Gulati et al 2021) provide recommendations and algorithms for clinicians to assess and diagnose chest pain in adult patients. The recommendations are as follows:

- For intermediate-risk patients with acute chest pain and no known CAD eligible for diagnostic testing after a negative or inconclusive evaluation for Acute Coronary Syndrome (ACS), CCTA is useful for exclusion of atherosclerotic plaque and obstructive CAD. (1A recommendation)
- For intermediate-risk patients with acute chest pain and known nonobstructive CAD, CCTA can be useful to determine progression of atherosclerotic plaque and obstructive CAD. (2a recommendation)
- For intermediate-high risk patients with stable chest pain and no known CAD, CCTA is effective for diagnosis of CAD, for risk stratification, and for guiding treatment decisions. (1A recommendation)
- For intermediate-high risk patients with stable chest pain after an inconclusive or abnormal exercise ECG or stress imaging study, CCTA is reasonable. (2a recommendation)
- For patients who have stable chest pain with previous coronary revascularization, CCTA is reasonable to evaluate bypass graft or stent patency (for stents ≥ 3 mm). (2a recommendation)
- For patients who have had prior CABG surgery presenting with stable chest pain who are suspected to have myocardial ischemia, it is reasonable to perform stress imaging or CCTA to evaluate for myocardial ischemia or graft stenosis or occlusion. (2a recommendation)
- For symptomatic patients with known nonobstructive CAD who have stable chest pain, CCTA is reasonable for determining atherosclerotic plaque burden and progression to obstructive CAD and guiding therapeutic decision-making. (2a recommendation)

The 2025 American Heart Association (AHA)/American College of Cardiology (ACC) Guidelines for the Management of Adults with Congenital Heart Disease recommendations are as follows:

- “In adults with Fontan circulation undergoing CT angiography to rule out thrombus or emboli in the Fontan or pulmonary vasculature, imaging should be performed using protocols to avoid false-negative or false-positive results.”
- “In adults with an arterial switch operation and symptoms concerning for myocardial ischemia, coronary evaluation with coronary angiography, cross-sectional imaging, and/or functional coronary assessment for an anatomic etiology should be performed.”
- “In adults with suspected anomalous aortic origin of a coronary artery (AAOCA), coronary CT angiography or MR angiography (if CT angiography is contraindicated) is recommended to confirm the anatomic diagnosis and guide management.”

Medical Policy: Cardiac Computed Tomography (CCT)/Coronary Computed Tomographic Angiography (CCTA)

Policy Number: 6.01.34

Page: 14 of 22

- “Periodic imaging of the neoaorta with MR angiography or CT angiography is reasonable in adults with hypertrophic left heart syndrome (HLHS) to evaluate for obstruction or progressive neoaortic dilation.”
- “For adults with repaired anomalous pulmonary venous connections (APVCs) and dyspnea on exertion and/ or reduced functional capacity, cardiac magnetic resonance (CMR) or computed tomography (CT) angiography is recommended to evaluate for venous obstruction or residual shunt.”
- “Patients with a new or suspected COA diagnosis should undergo transthoracic echocardiography and cross-sectional imaging (CMR/CT angiography) to determine the severity of COA, aortic arch anatomy, and ascending aorta dimensions—and to rule out associated intracardiac lesions.”

In 2017, the National Institute for Health and Care Excellence (NICE) endorsed non-invasive FFR using coronary CTA (FFR-CT), stating: “The committee concluded that the evidence suggests that HeartFlow FFRCT is safe, has high diagnostic accuracy, and that its use may avoid the need for invasive investigations.” For correct use, HeartFlow FFRCT requires access to 64-slice (or above) coronary CT angiography facilities.

The 2012 ACCF/AHA/American College of Physicians (ACP)/ American Association for Thoracic Surgery (AATS)/ Preventive Cardiovascular Nurses Association (PCNA)/ Society for Cardiovascular Angiography and Interventions (SCAI)/ Society of Thoracic Surgeons (STS) Guideline for the Diagnosis and Management of Patients with Stable Ischemic Heart Disease recommend the following:

- CCTA might be reasonable for patients with an intermediate pretest probability of ischemic heart disease (IHD) who have at least moderate physical functioning or no disabling comorbidity. (Level of Evidence: B)
- CCTA is reasonable for patients with a low to intermediate pretest probability of IHD who are incapable of at least moderate physical functioning or have disabling comorbidity with any of the following. (Level of Evidence: B)
 - o CCTA is reasonable for patients with an intermediate pretest probability of IHD who have continued symptoms with prior normal test findings;
 - o Have inconclusive results from prior exercise or pharmacological stress testing;
 - o Are unable to undergo stress with nuclear MPI or echocardiography. (Level of Evidence: C)

The 2010 ACCF/AHA Guidelines for the Assessment of Cardiovascular Risk in Asymptomatic Adults recommend:

- Coronary computed tomography angiography (CCTA) is not recommended for cardiovascular risk assessment in asymptomatic adults. (Level of Evidence: C)

REGULATORY STATUS

The United States Food and Drug Administration (FDA) regulates cardiac devices as medical devices. All cardiac devices including related components require FDA approval before marketing and use in

Medical Policy: Cardiac Computed Tomography (CCT)/Coronary Computed Tomographic Angiography (CCTA)

Policy Number: 6.01.34

Page: 15 of 22

the United States to ensure they are safe and effective for human use. Refer to the FDA Medical Device website. Available from: <https://www.fda.gov/medical-devices> [accessed 2026 May 22]

The FDA lists the most serious type of medical device recalls as well as early alert communications about corrective actions being taken by companies that the FDA believes are likely to be the most serious type of recalls on our website by the date that the FDA posts the information on our website. Available from: [Medical Device Recalls | FDA](#) [accessed 2026 May 22]

Contrast-enhanced cardiac CTA can be performed using either multidetector-row CT (MDCT) or electron beam CT (EBCT). Multiple manufacturers have received Section 510(k) clearance from the FDA to market MDCT machines equipped with at least 16 detector rows, and at least two (2) models of EBCT machines have been cleared by the FDA under Section 510(k). Intravenous iodinated contrast agents used for cardiac CTA have also received FDA approval.

CODE(S)

- Codes may not be covered under all circumstances.
- Code list may not be all inclusive (AMA and CMS code updates may occur more frequently than policy updates).
- (E/I)=Experimental/Investigational
- (NMN)=Not medically necessary/appropriate

CPT Codes

Code	Description
75572	Computed tomography, heart, with contrast material, for evaluation of cardiac structure and morphology (including 3D image postprocessing, assessment of cardiac function, and evaluation of venous structures, if performed)
75573	Computed tomography, heart, with contrast material, for evaluation of cardiac structure and morphology in the setting of congenital heart disease (including 3D image postprocessing, assessment of left ventricular (LV) cardiac function, right ventricular (RV) structure and function and evaluation of vascular structures, if performed)
75574	Computed tomographic angiography, heart, coronary arteries and bypass grafts (when present), with contrast material, including 3D image postprocessing (including evaluation of cardiac structure and morphology, assessment of cardiac function, and evaluation of venous structures, if performed)
75577	Quantification and characterization of coronary atherosclerotic plaque to assess severity of coronary disease, derived from augmentative software analysis of the data set from a coronary computed tomographic angiography, with interpretation and report by a physician or other qualified health care professional (Effective 01/01/26)

Medical Policy: Cardiac Computed Tomography (CCT)/Coronary Computed Tomographic Angiography (CCTA)

Policy Number: 6.01.34

Page: 16 of 22

Code	Description
75580	Noninvasive estimate of coronary fractional flow reserve (FFR) derived from augmentative software analysis of the data set from a coronary computed tomography angiography, with interpretation and report by a physician or other qualified health care professional

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HCPCS Codes

Code	Description
Not Applicable	

ICD10 Codes

Code	Description
Multiple Codes	

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Policy Number: 6.01.34

Page: 17 of 22

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Medical Policy: Cardiac Computed Tomography (CCT)/Coronary Computed Tomographic Angiography (CCTA)

Policy Number: 6.01.34

Page: 18 of 22

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Policy Number: 6.01.34

Page: 19 of 22

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Policy Number: 6.01.34

Page: 20 of 22

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Medical Policy: Cardiac Computed Tomography (CCT)/Coronary Computed Tomographic Angiography (CCTA)

Policy Number: 6.01.34

Page: 21 of 22

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SEARCH TERMS

Not Applicable

CENTERS FOR MEDICARE AND MEDICAID SERVICES (CMS)

[Cardiac Computed Tomography \(CCT\) and Coronary Computed Tomography Angiography \(CCTA\) \(LCD L33559\)](#) [accessed 2026 May 13]

[Non-Invasive Fractional Flow Reserve \(FFR\) for Ischemic Heart Disease \(LCD L39075\)](#) [accessed 2026 May 13]

PRODUCT DISCLAIMER

- Services are contract dependent; if a product does not cover a service, medical policy criteria do not apply.
- If a commercial product (including an Essential Plan or Child Health Plus product) covers a specific service, medical policy criteria apply to the benefit.
- If a Medicaid product covers a specific service, and there are no New York State Medicaid guidelines (eMedNY) criteria, medical policy criteria apply to the benefit.
- If a Medicare product (including Medicare HMO-Dual Special Needs Program (DSNP) 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.
- If a Medicare HMO-Dual Special Needs Program (DSNP) product DOES NOT cover a specific service, please refer to the Medicaid Product coverage line.

POLICY HISTORY/REVISION

Medical Policy: Cardiac Computed Tomography (CCT)/Coronary Computed Tomographic Angiography (CCTA)

Policy Number: 6.01.34

Page: 22 of 22

Committee Approval Dates	
06/16/05, 09/21/06, 09/20/07, 09/18/08, 09/17/09, 06/17/10, 06/16/11, 07/19/12, 10/17/13, 06/19/14, 01/22/15, 04/21/16, 06/15/17, 06/21/18, 07/18/19, 10/22/20, 08/19/21, 04/21/22, 04/20/23, 12/21/23, 11/21/24, 09/18/25, 01/22/26, 06/18/26	
Date	Summary of Changes
06/18/26	Off-cycle review. New criteria for individuals with prior history of cardiac surgeries or history of CAD. Clarification was added to the criteria for preoperative assessment for planned liver or kidney transplant.
01/22/26	Off-cycle review, additional risk factors added (hyperlipedemia and history of adverse pregnancy outcomes), added indication for chest pain with syncope, and moved a policy guideline regarding Cardiac CT for TAVR to a not medically necessary policy statement.
12/29/25	Code edit. Added 75577. Deleted 0623T, 0624T, 0625T, 0626T. Policy intent unchanged.
09/18/25	Annual review, new criteria for CCTA. New medically necessary criteria for Coronary CTA plaque quantification.
01/01/25	Summary of changes tracking implemented.
06/16/05	Original effective date