DESCRIPTION OF PROCEDURE

Coronary computed tomographic angiography (CCTA) is a noninvasive imaging study that uses intravenously administered contrast material and high-resolution, rapid imaging CT equipment to obtain detailed volumetric images of blood vessels. CTA can image blood vessels throughout the body. However, imaging of the coronary vasculature requires shorter image acquisition times to avoid blurring from the motion of the beating heart. The advanced spatial and temporal resolution features of these CT scanning systems offer a unique method for imaging the coronary arteries and the heart in motion, and for detecting arterial calcification that contributes to coronary artery disease.

APPROVAL SUPPORT

**Non-emergent chest pain**

- Low pretest probability patients who are not suitable for standard exercise stress testing or stress echocardiography.
- Intermediate pretest probability patients who are not suitable for stress echocardiography.

**Further evaluation of patients who have had stress testing**

- Low or intermediate probability of underlying coronary artery disease (CAD) in patients who have had indeterminate stress testing.
- Low or intermediate probability of underlying CAD in patients who have had positive stress testing and catheterization is not preferred.
Patients who have persistent symptoms suggestive of underlying coronary disease who have had negative stress testing.

**Evaluation of suspected coronary disease**
- For evaluation of suspected underlying coronary disease in patients who have had ventricular tachycardia.
- For evaluation of new onset heart failure in patients with low to intermediate probability of underlying coronary disease.

**Other**
- For evaluation of patients with suspected coronary anomalies.
- For further evaluation when angiography was indeterminate at defining coronary anatomy.
- Localization of coronary bypass grafts and other retrosternal anatomy prior to chest or cardiac surgery.
- Prior to high risk non-cardiac surgery when catheterization is not possible or preferred.
- For evaluation and monitoring of vascular abnormalities (e.g. Kawasaki’s disease, Takayasu’s, vasculitis)
- Pre and post-op evaluation of the pulmonary vein for ablation due to chronic atrial fibrillation.

**Contraindications**
- Body mass index (BMI) over 40
- Inability to get patient’s heart rate under 65 despite use of beta blockers
- Patients with uncontrolled atrial fibrillation or other arrhythmia
- Patients with extensive coronary calcifications or a coronary calcium score (Agatston score) greater than 1000.

**ADDITIONAL INFORMATION**
The above medical necessity recommendations are used to determine the best diagnostic study based on a patient’s specific clinical circumstances. The recommendations were developed using evidence based studies and current accepted clinical practices. Medical necessity will be determined using a combination of these recommendations as well as the patient’s individual clinical or social circumstances.

- Tests that will not change treatment recommendations should not be approved.
- Tests completed recently need a specific reason for repeat

## Pretest Probabilities of CAD

<table>
<thead>
<tr>
<th>Age (Years)</th>
<th>Gender</th>
<th>Typical/Definite Angina Pectoris</th>
<th>Atypical/Probable Angina Pectoris</th>
<th>Nonanginal Chest Pain</th>
<th>Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;39</td>
<td>Men</td>
<td>Intermediate</td>
<td>Intermediate</td>
<td>Low</td>
<td>Very low</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>Intermediate</td>
<td>Very low</td>
<td>Very low</td>
<td>Very low</td>
</tr>
</tbody>
</table>
**Duke Treadmill Score**
The equation for calculating the Duke treadmill score (DTS) is:
\[ \text{DTS} = \text{exercise time} \times (5 \times \text{ST deviation}) \times (4 \times \text{exercise angina}) \], with 0 = none, 1 = non-limiting, and 2 = exercise-limiting.
The score typically ranges from -25 to +15. These values correspond to low-risk (with a score greater than or equal to +5), intermediate risk (with scores ranging from -10 to +4), and high-risk (with a score less than or equal to -11) categories.

The Duke Score provides an annual mortality estimate: <1% for low risk, 1-3% for intermediate risk, and >3% for high risk.

**Determinants of a 4 MET functional capacity:**
Examples of activities:
- Less than 4 METs: Slow ballroom dancing, golfing with a cart, playing a musical instrument, and walking at approximately 2 mph to 3 mph
- Greater than 4 METs: Climbing a flight of stairs or walking up a hill, walking on level ground at 4 mph, and performing heavy work around the house

**Coding Information:** The codes listed in this policy are for reference purposes only. Listing of a service or device code in this policy does not imply that the service described by this code is covered or non-covered. Coverage is determined by the benefit document. This list of codes may not be all inclusive.

<table>
<thead>
<tr>
<th>CPT</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>75574</td>
<td>CT (Computed Tomography) Angiography Heart with 3D Image</td>
</tr>
<tr>
<td>75574</td>
<td>Coronary CT Angiography (CCTA)</td>
</tr>
</tbody>
</table>

**References Used for Determinations**


