

WHAT WILL HAPPEN DURING THE CCTA?

A nurse or technologist may ask you to remove your clothes above the waist and wear a hospital gown. You may be asked to remove metal objects such as jewelry, which can affect the CT images.

- An intravenous (IV) line will be inserted into a vein in your arm.
- The CT scanner is a machine with a large ring-like or doughnut-like structure that has a sliding bed in its center. You will be asked to lie on your back on the scanner bed. While you may lie on this table for approximately 10 minutes, most of this time will involve preparation. The actual images only take a few seconds to obtain. Your total time in the imaging center may be 60-90 minutes if you require treatment with any medications prior to the scan.
- The technologist or nurse will apply sticky patches called electrodes on your chest. This will be used to monitor your heart beat during the exam.
- You will be asked to lie still and you will receive instructions to hold your breath for short periods of time (less than 15 seconds) while pictures are taken. It is very important to be absolutely still and to not breathe, move or swallow while the pictures are being taken.
- During some steps of the test, contrast dye will be injected through the IV. This may cause a warm feeling all over your body, which usually disappears within a minute or so.

CORONARY ARTERY CALCIUM (CAC) SCAN

A coronary artery calcium (CAC) scan may be ordered for individuals who do not experience any symptoms for determining future risk of heart disease. This study may often be ordered for patients who do not experience any symptoms but may provide your doctor with more information regarding plaque build-up in your heart arteries. While there are many similarities between a CAC scan and a CCTA, the CAC scan does not require an injection of contrast dye or the use of an IV line in your vein.

CAC scans can be used to show hardened plaque build-up in the coronary arteries, which allows your doctor to improve and refine the estimation of the risk of future heart attacks beyond traditional risk calculators. However, a CAC scan cannot show blockages in the coronary arteries.

A CAC scan is only helpful for individuals who do not have known coronary artery disease or plaque in the heart vessels. The most common indication for a CAC scan is when there is uncertainty regarding the risk of coronary heart disease, or uncertainty regarding the need for cholesterol lowering medication.



CARDIAC CT ANGIOGRAPHY A PATIENT'S GUIDE

WHAT IS CCTA?

Cardiac computed tomography angiography (CCTA) is a quick, non-invasive test for women and men that uses a specialized computed tomography (CT) scanner to obtain a 3-dimensional image of the heart including blood vessels that supply the heart muscle (the “coronary arteries”). CCTA allows your physician to see whether or not plaque has developed in the coronary arteries that may result in “blockages” that might cause symptoms or increase your risk of a future heart attack. CCTA also allows for accurate visualization of the 3-dimensional heart structure.

BENEFITS OF CCTA

CCTA is useful to decide that the coronary arteries are not the cause of chest discomfort or shortness of breath. CCTA is able to identify severe blockages, as well as any plaque buildup in the coronary arteries that may not be causing severe narrowing at present but may lead to heart problems in the future. CCTA has an important advantage over other traditional approaches by being able to directly visualize early stage plaque that may be missed by traditional approaches. This allows for enhanced prevention therapies and lifestyle changes to prevent a future heart attack.

WHEN IS CCTA USED?

CCTA is generally considered best for individuals with symptoms but who have no prior history of coronary artery disease or to clarify findings from a stress test. In certain cases, CCTA may be considered appropriate for patients who have previously experienced heart attacks, or who have undergone coronary stent placement or coronary artery bypass surgery. Numerous other possible indications exist for CCTA, which may be further explained by your doctor.

WHAT ARE OTHER REASONS TO HAVE CCTA?

CCTA can also be used to evaluate the valves of the heart, and is sometimes performed prior various cardiac procedures (e.g prior to ablation procedures, or prior to valve replacement procedures).

HOW IS CCTA PERFORMED?

CCTA is a non-invasive technique that uses low radiation dose x-rays to obtain images of the body. An electrocardiogram, or measure of a patient’s heart rhythm, is recorded during the CCTA examination so that images can be matched with the motion of the heart. During the CCTA, contrast (iodine dye) is injected in your vein so that the coronary arteries can be seen. Some patients may feel a “warm” sensation when the contrast is injected. Allergic reactions to the contrast dye occur very rarely. The study is then interpreted by a clinician with experience in CCTA.

HOW TO PREPARE FOR CCTA

Based upon your condition and the doctor performing the CTA, you may be asked to do the following — always check with your doctor for your preparation before the test:

- Take a beta-blocker medication to lower your heart rate. Some centers may give such medications by mouth and/or inject it through a vein prior to the test. This will help create the best images of the moving heart.
- Avoid caffeinated drinks or food (e.g. coffee, tea, sodas, energy drinks, chocolate) for 12 - 24 hours prior to your test.
- Do not eat for 4 hours or drink anything for 1 hour before the test (This may vary, please be sure to check with your doctor’s office prior to your test).
- Do not take certain medications such as Viagra, Cialis, or Levitra for at least 48 - 78 hours prior to your test.
- Temporarily stop taking Glucophage (Metformin) for 48 hours after the test. This is particularly important in patients with reduced kidney function.
- Inform your doctor of any medications you are taking – including over-the-counter pain medications such as Advil or Motrin.
- Inform your doctor and the CT technologist if you have any allergies to contrast material. If you have had prior reaction to injected contrast, your doctor may prescribe medications to reduce the risk of such a reaction.
- A women should inform her doctor and the CT technologist if there is any possibility that she is pregnant.
- If needed, blood tests will be drawn to check for kidney disease prior to the test. Individuals with mild kidney disease can still receive injected contrast but may require additional medications and IV fluids before or after the test.
- If you have irregular heartbeats it may make it difficult to get good CT images in some cases, and this should be clearly mentioned when your appointment is made to allow for adjustment in the scanning protocol.