

CT Coronary Angiography

Patient Information



What is CT Coronary Angiography?

Computed Tomography (CT) Coronary Angiography (CTCA) is a new type of CT (or CAT Scan) that looks at the arteries of the heart (the coronary arteries). It will detect plaque that is narrowing or blocking the coronary arteries. It can determine any abnormalities of the arteries you may have been born with and it is frequently used in following patients who have had bypass surgery or who have had stents put into their arteries.

CT Coronary Artery Calcium Scoring can be performed at the same time. This measures the amount of calcified plaque in your coronary arteries and when combined with other information such as your age and sex, gives a number (Agatston score). This Agatston score tells us your statistical likelihood of having a heart attack.

How is the test done?

CT Coronary Angiography is performed just like a normal CT scan. You will be asked to lie on your back on the CT table. The Radiographer (the medical imaging technologist) will place electrocardiogram (ECG) leads on your chest. You will be asked to breathe in and hold your breath several times while the machine takes the initial images. The CT scanner assesses your heart beat and calculates when it wants to take the scans. You will be given a spray under the tongue to temporarily dilate the coronary arteries. This may cause a short mild headache which will quickly wear off. The radiographer will then insert a small plastic cannula into a vein in your arm so IV iodine-based contrast (X-ray dye) can be given to you. You will then be asked to breathe in and hold your breath a few more times, the contrast is injected during the final breath-hold. Even a small amount of motion can significantly degrade the images.

The Radiographer then processes the images and, with the aid of the computer software, produces special 2D and 3D images of your Coronary Arteries. Your Coronary Artery Calcium Score will be calculated. The images are then reviewed by the Radiologist (the Specialist Doctor).

The test itself will take about 20 to 30 minutes in total, but do allow for 2 hours for the entire examination.

Is there any preparation?

Special preparation is required. Please refer to the CT Cardiac Scan Preparation Sheet which is available online. This preparation will also be communicated to you when your appointment booking is finalised. It is best to arrive 1 hour before the time of the test. You will be given a questionnaire to fill out. You will be asked if you have any

heart disease or if you are on any medications for your heart. If you are taking Metformin-based drugs, they need to be stopped on the day of the procedure.

We will then measure your pulse rate. If it is high, you may be given one or two tablets (Metoprolol, a Beta-Blocker) which safely lower your heart rate over a period of 45 minutes or so. You may also be given a spray under your tongue (GTN) which acts over a few minutes to maximise the size of your arteries.

What is the contrast injected?

The contrast injected is the normal X-ray dye used for routine CT scans. If you have known sensitivity to this dye, you need to notify us as we may need to take extra precautions. When injected, it is common to experience a metallic taste in your mouth and a warm feeling throughout your body and maybe even the sensation you want to go to the toilet. These feelings are normal and will go away in a few seconds.

Can I drive home after the procedure?

Usually you can go about your normal activities. However, in rare circumstances you may need assistance.

What are the potential side effects?

Reactions to the IV contrast agent are rare and usually minor eg. mild rash, sneezing, itchiness and hives. If you have had a previous allergic reaction to contrast agent or you have a strong history of allergy to other things (like foods, pollens or dust), you should inform us before having the procedure. The Radiologist (Doctor) is at hand at all times supervising the procedure.

What do I do after the procedure?

You should drink plenty of fluids after the procedure to help flush the contrast agent from your body. You will have excreted the contrast within 24–48 hours.

Diabetics on Metformin-based medications will need a follow-up blood test 48 hours after the procedure to check their kidney function has not changed before restarting the medications.

Who will be reporting my scan?

Examinations are reported by our Radiologists Credentialed by the 'Conjoint Committee for the Recognition of Training in CT Coronary Angiography'. Reporting usually takes a minimum of 24hrs after your examination is completed.

How much will it cost?

Medicare eligible examinations are Bulk Billed. Otherwise there is an out of pocket fee; advised when booking your appointment.

What are the risks of CTCA?

The main risks of a CTCA are:

- Complications of the IV procedure and iodinated contrast agent; for example:
 - Rupture of the vein from the cannula, which is rare.
 - Injection of contrast medium into the surrounding tissues from the rapid injection of contrast agent, which might burst the wall of a small vein.
 - Air injected into the vein, although most modern power injectors provide safety measures so this does not happen.
 - Allergic reaction to the contrast agent that can include sneezing, itching, rash and hives, which occur in a small percentage of patients. These usually occur within minutes of the injection. More severe reactions are rare, and include drop in blood pressure and soft tissue swelling, and can be life threatening. These reactions require immediate treatment. Medical staff at the radiology facility where you are having the procedure are trained to treat severe reactions if they occur.
 - Patients with renal impairment (kidney problems) might experience worsening of kidney function after the iodinated contrast. This usually improves over several days particularly if patients stay well hydrated. If impairment of kidney function is severe, the procedure is generally not carried out unless the information provided by the scan is considered to be so valuable that this outweighs the risk of further deterioration in kidney function.
 - Beta blockers can cause bronchospasm (major airway narrowing) in asthmatics, and are not given in patients who depend on high heart rates to maintain normal heart function.
 - Nitroglycerin (GTN) can cause headache and drop in blood pressure.
 - Patients taking metformin for diabetes may or may not need to stop taking it for this test, depending on whether or not their kidney function is normal. If you are taking metformin, you will need to bring the results of a recent kidney function test with you, so that it can be checked.

- The procedure would not normally be carried out on pregnant woman because of the radiation exposure to the foetus (unborn baby).
- In breast-feeding patients, the contrast agent can enter the breast milk, but not in sufficient quantities to affect your baby

