

Computed Tomography (CT) coronary angiography is a diagnostic imaging test that allows us to look at the arteries that supply blood to your heart. You may need a CT coronary angiogram if your doctor wants to diagnose the cause of chest pain or other symptoms.

Important information about how to prepare for your scan?

We are sending you this information because you have an appointment to attend the Queen Square Imaging Centre for a CT Coronary Angiogram. To enable us to provide you with the highest quality images possible, there are some basic instructions we need you to follow prior to your appointment. If you think you may have a problem that prevents you from following these instructions, please let us know as soon as possible.

1. Please do not eat anything for 4 hours before your scan. You may continue to drink water.
2. Please do not smoke for 4 hours before your scan.
3. **Please do not consume any food or drinks that contain caffeine for 24 hours** prior to your scan. This includes all tea and coffee (including de-caffeinated drinks), drinking chocolate, fizzy drinks, chocolate bars and some medications. Caffeine can increase the heart rate, making it difficult to get clear pictures of the heart.
4. Since the quality of your CT coronary angiogram is heavily influenced by your heart rate, we would recommend that you plan your journey so that you arrive in time for your appointment, without having to rush or become anxious.

5. You will be required to remove jewellery and clothing above your waist for your scan. You will be invited to change into a gown in a private changing area, where you will also be able to lock your belongings securely.

When you arrive in the department, we will ask you to complete a safety questionnaire and a brief registration form. **Please let us know in advance of your appointment if:**

- **You have ever had an allergic reaction to CT (iodinated) contrast dye.**
- **You are asthmatic or are currently suffering from any breathing problems.**
- **You will need to take Sildenafil (Viagra) within the 24 hours before your scan.**
- **You have a history of severe cardiac (heart) disease, including heart failure, heart block, valve disease or a family history of heart disease.**
- **You are taking Verapamil.**
- **You have a history of renal (kidney) disease.**

If any of these apply to you, please let us know as soon as possible so we can discuss your suitability for this test with your referrer.

Patients of childbearing potential are also asked to contact us if you suspect that you may be pregnant, OR if the appointment we have given you is more than 10 days after the start of your last menstrual period. This test uses radiation and there is a risk to the unborn baby from x-ray exposure. When you arrive, we will ask when you last period started. If it is more than 10 days earlier, your appointment will be postponed.

What is a CT Coronary Angiogram?

A CT coronary angiogram is performed using a CT scanner and involves the use of x-rays to create detailed cross-sectional 2D and 3D images of the heart and its blood vessels. These images are viewed and interpreted by specialist heart and lung radiology consultants to identify any abnormalities that may reveal the cause of symptoms such as chest pain, or the early signs of coronary artery disease. Sometimes, this scan will be performed alongside CT Calcium Scoring.

Why is a CT Coronary Angiogram performed?

The heart is a muscular pump that circulates blood to nourish all the organs of the body. The heart muscle needs its own blood supply, and this blood is fed into the heart through three main vessels (coronary arteries) which sometimes get narrowed or blocked. This can lead to angina or a heart attack. Using a CT scanner it is now possible to get useful information about the condition of the coronary arteries.

Quite often, a CT Coronary Angiogram will be performed at the same time as another CT test called a CT Calcium Score. This scan is a specialised test that provides pictures of the heart that can help your doctor detect and measure calcium containing plaque in the coronary arteries. These measurements can allow your doctor to identify possible coronary artery disease before you have signs and symptoms.

What does a CT Coronary Angiogram involve?

Unlike a conventional angiogram procedure, a CT Coronary Angiogram is a non-invasive and painless imaging test.

Prior to the scan, you will be asked to change from your own clothing into a hospital gown and remove all jewellery. You will be asked to lie down on your back on a comfortable CT bed. A radiographer will then use a small needle to insert a small plastic tube (a cannula) into a vein in your arm or hand. We will use this tube to give you an x-ray dye (contrast) during your scan. This is a clear and colourless liquid which shows up on the scan pictures and allows us to see your blood vessels in detail.

You will also have some sticky ECG patches placed on your chest so that we can record your heart rate during the scan.

During the scan, you will need to lie very still. The table will move slowly through the scanner whilst the inside of the scanner rotates and takes a series of x-ray pictures. The table will move in and out of the scanner a few times before the scan is finished. Whilst the images are being taken, we will give you the injection of x-ray dye. This injection can make you feel warm and flushed, but this feeling will pass quickly.

Your heart rate is critical to the success of this test. If your resting heart rate is too high to achieve a good quality scan, we may need to give you a medication called a beta-blocker to slow your heart rate temporarily. Doing so provides clearer images on the CT scan. **Please let us know if you have had any side effects from beta blockers in the past.**

Just before your scan, we may also give you nitro-glycerine (GTN spray) to widen (dilate) the coronary arteries. This is given as a spray under your tongue.

After the scan, the cannula is removed, and we will check your blood pressure and heart rate. You will then be able to return to normal daily activities, although we would advise you to drink plenty of water to help flush the x-ray dye from your system. We also advise you not to drive for 4 hours following your appointment.

Even though the scan itself only takes a few minutes, we would recommend you allow for up to 1 hour for the entire process to be completed. The precise time that you will be in the department depends very much on your heart rate and how you respond to beta blockers (if necessary). **Please note that in some rare cases, an individual patient's response to beta blockers is not sufficient to enable scanning, in which case we would need to abandon the test.**

Is a CT Coronary Angiogram safe?

During a CT coronary angiogram, you will be briefly exposed to a small and highly focussed amount of radiation in the form of x-rays. For this reason, we would typically not use CT for pregnant patients or for young children unless necessary.

Our modern scanner uses lower doses than many other CT scanners in use. In fact, the doses used for CT scanning in general are so low that the risk of developing side effects from the radiation is too small to be reliably measured. Nevertheless, our skilled staff are trained to make sure that radiation is only used when there is a clear medical benefit and that all doses are kept as low as reasonable possible.

Whilst rare, it is possible that you could have an allergic reaction to the x-ray dye or to the beta blocker medication used for the scan. We will go through a safety checklist with you prior to your scan to identify any reason why you should not have the contrast dye. However, please talk to your doctor if you are concerned about having an allergic reaction.

When will I get my results?

The images from your CT coronary angiogram are ready for the cardiologist or radiologist to view soon after your scan. They will then write a report within 48 hours which will be sent to your doctor so they can discuss the result of the test with you.