

What is a CT Coronary Angiogram?

Your doctor or surgeon has referred you for a CT coronary angiogram (CTCA) because they would like to find out if you have narrowing of the coronary arteries, which could be causing your symptoms. A CTCA uses a CT scanner to take pictures or images of the coronary arteries of the beating heart. These arteries supply blood to the heart muscle, and disease of these vessels (atherosclerosis) is responsible for most heart attacks.



A contrast agent (“dye”) is injected into a vein (usually in the arm). The contrast allows the inside and outside structure of blood vessels to be clearly visible on the CTCA images.

Medication to slow down the heart rate might also be given to make the CT images even clearer and easier to interpret. This will either be given in tablet form or into a vein through a cannula (a thin plastic tube or “drip”) inserted in your arm.

How long will the procedure take?



The CTCA scan takes approximately 20 minutes. Please allow time to register at reception and up to 2 hours to prepare for the scan. You may be requested to wait up to 30 minutes after the procedure so our staff can be sure that you are ready to be discharged home. In total, you may be in the department for up to 3 or 4 hours.

Is there any special preparation?

At the time of your booking, please inform the staff before the procedure if you have any allergies, are diabetic, have kidney problems, take blood thinning medication or you are pregnant or breast feeding. It would also be helpful to know in advance if you have difficult veins, have a Port-a-Cath or have an irregular heart rhythm.

Please list or bring all of your prescribed medications, those medications that you buy over the counter, including herbal remedies and supplements.

If you are taking metformin for diabetes, you may or may not need to stop taking it for this CT scan, depending on whether or not your kidney function is normal. Please notify staff at time of booking of your most recent kidney function test. You may be required to have a more recent blood test

Special preparation is required. At the time of booking, our staff will provide you with written preparation instructions such as:

- Remaining well hydrated in the 24 hours before your CTCA;
- **Avoiding all caffeine** for a period of 24 hours prior to your appointment time. This includes alcohol, coffee, tea, chocolate and all coca cola like drinks;
- **Avoiding smoking** for 12 hours prior to the examination;
- **Avoiding stimulant medications** (such as Viagra);
- On the day of your CTCA, you will be required to **fast for 2 hours** before the scan so your stomach is not full, but you can have water and take your regular medications. Avoid strenuous exercise.

If these preparation guidelines are not adhered to, we may need to re-book the CTCA as the images will be technically degraded and non-diagnostic.

It is recommended that you do not wear any clothes with metal around your chest, e.g. bra. You may be asked to change into a gown to improve the images.

You may need someone to drive you home after the procedure in case we have to give you additional medication on the day to help slow your heart rate.

What do I need to bring with me?

On the day of your appointment, please ensure you bring:

- Your referral form (if you have it)
- All previous relevant scans or x-rays

- Medicare and healthcare cards (e.g. DVA or healthcare concession card)
- List of all medications
- Recent blood test results (within 3 months) detailing kidney function

What happens during the procedure?

Prior to the CT scan, our clinical staff (radiologist, radiographer or nurse) will discuss the examination with you, including the need for the administration of heart medications during the CT scan and any risks specific to you. You will be provided with the opportunity to ask questions.

To prepare you for the CTCA scan, our clinical staff will assess your heart rate and blood pressure. CT images are clearer if your heart rate is low, and you might be given medications before the test to slow down your heart rate. This could require several hours of preparation after you arrive at our imaging centre before you have the CTCA.

Once your heart rate is low enough, you will be asked to change into a gown. You will be brought to the CT room where you will lie on the CT table. ECG leads will be placed onto your chest to monitor your heart rhythm. A cannula ("drip") will be put into a vein in your arm so that you can have the injection of heart medication (if needed) and the contrast ("dye") during the CT scan. This will be done by one of our clinical staff -a radiologist, radiographer or nurse.

The CT table will move in and out multiple times and give you breathing instructions before each scan. It is important you take the same sized breath of the same size each time. Our nurse or radiologist may place a tablet under your tongue to help better visualise your coronary arteries. This medication can sometimes cause a headache. When the contrast media is injected, you may feel a hot flush feeling and/or a metallic taste in your mouth. It may also cause you to feel the sensation of passing urine in your bladder area.

Once the scan is complete, you will be able to dress. Our nursing staff will observe you for a minimum of 30 minutes after the scan. After this time, if your blood pressure is stable and you are not feeling dizzy, drowsy, or unwell, your cannula will be removed and you can leave.

Are there any after effects from the treatment?

Even though you will have to stay after the CTCA until the effects of medication used to lower the heart rate have worn off, your vision may be affected or you could still feel a little light-headed whilst walking or driving. Therefore, we recommend that you do not drive if you have been given this medication.

Rarely, skin irritation from the patches used to connect the ECG wires can occur.

What happens after the procedure?

Once all the CT scans have been taken (around 20 minutes), you will be taken to a recovery area for observation and the IV cannula will be removed before you are allowed to go home. If you have had medication to lower your heart rate, you might be asked to stay until the effects have worn off.

Our staff will advise you of ways to look after yourself following a CTCA.

What are the benefits?

CTCA is a relatively new test, and the techniques are still evolving with the rapid development of new equipment. There is no clear consensus amongst specialist doctors (cardiologists and radiologists) as to the benefits of the test. Published information would suggest that if this test is carried out and no coronary artery disease is detected, your doctor can use this information to manage your symptoms. When the coronary arteries show abnormalities, then your doctor can change your treatment according to the details of the abnormalities shown.

The test has the benefit of being able to show the extent and location of atherosclerosis (a disease that obstructs blood flow in the arteries) within the coronary arteries, even if it is not causing obstruction to the blood flow.

Are there any risks?

In referring you for this scan, your doctor is of the opinion that the benefit of this scan for you are greater than the risks. There are some risks and complications associated with a CTCA.

An abnormal CT coronary angiogram may affect your ability to obtain life insurance, or other types of insurance, as you will be deemed to be at increased risk of heart disease. If this might be an issue for you, it should be discussed with your referring doctor before you proceed with the CTCA scan.

CT uses ionising radiation to produce the images. The radiation doses associated with performing a CT scan of your heart, a CT coronary angiogram, are kept as low as possible by the CT radiographer and the associated risks are low.

Please inform the staff before the scan if you:

- have any allergies;
- have any thyroid problems;
- are or suspect that you may be pregnant;
- are asthmatic;
- are diabetic;
- have any kidney problems; or
- take diabetic medication that contains Metformin.

The risks and complications associated with iodinated contrast media can include but are not limited to the following:

- Leakage of contrast media outside the blood vessel
- Allergic reactions
- Patients with kidney problems may experience worsening of their kidney function but this usually improves over several days

The risks and complications associated with the medications given can include but are not limited to the following:

- Airway narrowing in asthmatic patients
- Headache or drop in blood pressure

In the event that you experience one of these side effects, the imaging centre has staff who are suitably trained to give appropriate medication and use the equipment needed to treat a reaction.

Before the CTCA scan, the radiologist (or delegate), will discuss the procedure with you in detail, including any risks specific to you. You will be provided with the opportunity to ask questions. It may be necessary to do a formal consultation to make sure that the procedure is the most appropriate for you.

When do I get the results?

The Medical Imaging Specialist who interprets the images will send a report outlining the procedure to your referring doctor/surgeon and your regular GP. It is important that you make a follow-up appointment with your referring doctor/surgeon to discuss your results.

I still have questions, who can I ask?

Medical information can be complex, and you may receive information that you do not fully understand. It is important for you to consider the risks and outcomes of the procedure as well as your personal needs before making a decision to undergo the procedure.

If you have read this online information and are still unsure if this is the correct scan for you; before making a booking, you should discuss your questions or concerns with your referring doctor in the first instance. Your regular GP and/ or your family may also be a useful resource. Your referring doctor can answer questions about the risks and benefits of not having the procedure and other options for treatment.



Online Patient Information -CT Coronary Angiogram

If you have questions before your appointment about what is involved on the day, our staff would be happy to assist. Please contact the Lumus Imaging centre where you have made your appointment.