Having a CT Coronary Angiogram

Information for Patients

In this leaflet:

Introduction

This leaflet tells you about having a CT Coronary Angiogram, a test to look at the blood vessels to the heart. It explains how the test is done, what to expect, and what the possible risks are.
If you have any questions or concerns, please do not hesitate to speak to a doctor or nurse caring for you.

What is a CT Coronary Angiogram?

CT is a non-invasive way of looking inside your body to help diagnose medical conditions and guide treatment. A CT (computed tomography) scanner uses special x-ray equipment and computers to produce images of multiple “slices” of the part of the body being scanned. These images of the inside of the body can then be examined on a computer monitor.

CT Scans provide much greater detail of internal organs, bone, blood vessels and soft tissue than ordinary x-rays and so are often the preferred method of diagnosing a wide range of medical conditions such as cancers, infection, inflammation, trauma and musculoskeletal disorders. A CT Coronary Angiogram can identify calcification, narrowing or blockage of the arteries to the heart.

How does it work?

The CT scanner consists of a ‘doughnut-shaped’ structure with a hole, or short tunnel, in the centre. You will lie on a narrow examination table that slides into and out of this tunnel. X-rays produced by the scanner pass through your body and are detected by electronic sensors on the other side of the ring. This information is sent to a computer that produces a picture of the internal structure of the body. Modern CT scanners are so fast that they can scan through large sections of the body in just a few seconds.

The scanner is operated by a Radiographer, who is a professional trained to carry out X-rays and other imaging procedures. The pictures are displayed on a computer workstation for examination by the Radiologist, who is a doctor specially trained to interpret the images and carry out more complex imaging examinations.

Some scans need to be performed with an injection of special contrast (dye) which is used to enhance visibility of the area being scanned, particularly the blood vessels and blood flow to organs.

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Are there any risks?

CT scanning involves the use of X-rays. There are strict guidelines in place for the use of x-rays in diagnosing medical conditions so CT scans can only be performed at the request of a Doctor. The amount of radiation used is more than an ordinary X-ray of the chest or body and is equal to the natural radiation that we receive from the atmosphere over a period of approximately three years. Women who are or might be pregnant must inform a member of staff in advance. Because children are more sensitive to radiation, they should have a CT study only if it is essential for making a diagnosis and should not have repeated CT studies unless absolutely necessary. We will keep the radiation dose as low as we possibly can.

A CT Coronary Angiogram involves you having a contrast medium (dye) injected into a vein to visualize the blood vessels to the heart. The injection usually causes nothing more than a warm feeling passing around your body, a metallic taste in your mouth and occasionally a sensation of needing to urinate. These effects subside within a few minutes. The risk of serious allergic reaction to contrast materials that contain iodine is extremely rare, and radiology departments are well equipped to deal with them.

Despite these slight risks, your doctor believes it is advisable that you should have this examination, and do bear in mind there are greater risks from missing a serious disorder by *not* having your scan.

What do I need to do to prepare for my scan?

Taking tablets and medicines
Ordinarily you should continue to take all your normal medication.
If you take Metformin (Glucophage) tablets for diabetes, please let us know on the day of your test. We sometimes ask patients to stop these tablets for two days after their test.

- If you are taking Viagra (sildenafil) or similar drugs (phosphodiesterase inhibitors) on a regular basis please contact your cardiologist, GP or other doctor to ensure it is safe for you to refrain from taking this in the 24 hours prior to your procedure.

Females
Females are asked to contact the Radiology department if you suspect that you may be pregnant OR if the appointment is more than 10 days after the *start* of your last period. This test uses radiation and there is a risk to the unborn baby if we were to do the X-rays when you are pregnant. When you arrive for your test, you will be asked when your last period started. If it is more than 10 days earlier, your appointment will be postponed.

Allergy to iodine or intravenous contrast medium
You should inform us in advance if you have a known allergy to iodine or intravenous contrast material (dye). Your doctor may prescribe medications prior to the examination to reduce the risk of an allergic reaction.

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Where do I go when I arrive at the hospital?

Please report to the reception desk in the Radiology department (B8) with your appointment letter. You will be asked to arrive 30 minutes before your scan time. Please click on the following link for a site map of the hospital:

http://www.ruh.nhs.uk/finding/documents/RUH_directory_map.pdf

You will be asked to sit in the waiting area until called by a member of staff.
A member of the team will explain the test and answer any questions.

Please let us know when you arrive for your test if you have any of the following conditions:

- Diabetes
- Asthma
- Kidney disease
- Thyroid problems
- Any allergies
- You have had a reaction to iodine or any intravenous contrast medium (if you are not sure about this, please ask us).
- Please bring a list of your medications with you.

In addition please let us know if you:

- Have taken Viagra (sildenafil) or similar drugs (phosphodiesterase inhibitors) in the last 24 hours.
- Are taking Verapamil
- Are taking a beta blocker.
- Are using GTN spray/tablets.
- Have a history of heart disease including:
    - Heart failure
    - Valve disease including aortic stenosis
    - Hypertrophic cardiomyopathy
    - Heart block/atrioventricular block
    - Family history of heart disease
    - Previous heart surgery or coronary stents inserted.
- Have a history of peripheral vascular disease.
- Have a pacemaker or implantable defibrillator.

Your referring doctor should provide this information also, but it is helpful on the day if you can provide it as well.

On the day of the test, prior to your examination:

- Please avoid caffeine (including tea, coffee, chocolate and many fizzy drinks).

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If you have to undress for the procedure, you will be shown to a private cubicle and asked to change into a clean gown. You will be asked to remove all jewellery and metal from the area to be scanned. Your clothes and valuables will be secured in a locker until after the procedure.

Can I bring a relative or friend?

You may bring a relative or friend with you to the appointment but, as the examination uses x-rays, for reasons of safety they will not be able to accompany you into the examination room, except in very special circumstances. If the patient is a young child or is un-cooperative, a parent or health worker may stay in the room, but will be required to wear a protective lead apron.

If you need an interpreter please tell us when you receive your appointment so that we can arrange this.

What happens during the procedure?

You will be taken into the CT Scanning Room and asked to lie on the scanner table flat on your back. The radiographer will ensure that you are lying comfortably in the correct position. Straps and pillows may be used to help maintain the correct position and to keep you still during the examination.
You will have a small tube, called a cannula, inserted into one of the veins in your arm. If intravenous contrast is used, the contrast is administered through the cannula before or during the scan using a special pump.

Before the main scan is done you will have three heart monitor leads placed on to the skin at the top of the chest and down the side. These are attached to an ECG machine which monitors your heart beat.

In order to be able to accurately perform the examination your heart rate needs to be steady and around 60 beats per minute. (Your cardiologist/doctor may have prescribed medication (a beta-blocker) to slow your heart rate down before your CT scan).

Anxiety and certain heart conditions can make the heart beat faster than normal – please arrive in plenty of time.

We will check your heart rate prior to commencing the examination.
If your heart rate is too high for the scan we may give you a heart rate-lowering medication (beta-blocker) via the cannula in your arm. This is a short-acting drug so your heart rate will return to normal within the hour. Most patients do not notice any change when the medication is administered. We will monitor your blood pressure and heart rate whilst administering the beta-blocker.

On occasion, and despite heart-rate lowering medication, your heart rate may be too high to accurately perform the CT examination. We may carry out part or none of the CT

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scan in this scenario. If this is the case we will inform the doctor who referred you and may re-attempt the test on another day or discuss with them an alternative type of test to help answer their question.

Ordinarily we will also administer a spray (GTN – glyceryl trinitrate) under the tongue just prior to the procedure which allows us to see the vessels surrounding the heart more easily. This can cause a short-lived headache in some patients, which normally resolves quite quickly.

You will be asked to hold your breath and will feel the table move in and out of the scanner whilst the scans are taken. Each scan will take approximately 10-20 seconds (one breath hold). You will be alone in the CT room during the scan but the Radiographer will be able to see, hear and speak to you at all times.

When the scan is finished the radiographer will check the images are correct and complete before helping you get off the table.

What happens after the scan?

If you have had an injection of contrast into a vein, or been given medication to slow your heart rate, you will need to stay in the department for 20-30 minutes after your scan. We will recheck your blood pressure to ensure that the effects of the beta-blocker have worn off before you go home. A radiographer or helper will then take the cannula out. You may eat and drink as normal as soon as the examination is finished.

How do I get my results?

A specialist Radiologist will review the images from your CT scan and send a report to your doctor. Your GP or hospital Consultant who referred you for the test will see you to discuss the results.

Any questions?

We will do our best to make your visit as comfortable and stress free as possible. If you have any questions, or suggestions for us, please contact CT appointments on 01225 825989.

More information

For general information about Radiology departments, visit The Royal College of Radiologists' website: https://www.rcr.ac.uk/public-and-media/what-expect-when

For information about the effects of x-rays read the National Radiological Protection Board (NRPB) publication: 'X-rays how safe are they?' on the website: http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1194947388410

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How do I make a comment about my examination?

If you have any concerns or suggestions following your examination, please contact the Patient Advice and Liaison Service (PALS),
Royal United Hospital Bath NHS Trust, Combe Park, Bath BA1 3NG.
Email: ruh-tr.PatientAdviceandLiaisonService@nhs.net
Tel: 01225 821655 or 01225 826319

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