

CT SCANNING DEPARTMENT
CARDIAC COMPUTED TOMOGRAPHY (CT) SCAN

What is Coronary Artery Disease?

Coronary artery disease is caused by a build-up of material in the walls of the arteries that supply blood to the heart muscle, a condition known as atherosclerosis. Unfortunately, many people do not know their risk of death or disability from heart disease because in the early stages of atherosclerosis, patients have no symptoms. Often the first symptom is a heart attack; therefore early detection of heart disease is the key to preventing a heart attack.

Cardiac CT Angiography

Rupture of a soft plaque within the coronary arteries is the commonest cause of an acute coronary event (i.e. a heart attack). A traditional heart catheterisation is the best way to define the anatomy of the coronary arteries. This test, however, involves the insertion of tubes (catheters) inside the body and though this is a very safe and well-established technique, there are risks and discomforts with any invasive procedure.

Our CT scanner offers a new way of evaluating the coronary arteries without the need to insert catheters. For many patients, CT angiography can be utilised instead of heart catheterisation.

With this test there are very few people who cannot be scanned by CT but as it uses x-rays, we will not scan pregnant women. Please tell the CT team if there is any chance at all that you could be pregnant.

Radiation is kept to a minimum and the benefit of the scan far outweighs the risk to your health. If you do have any concerns, please ask to discuss this in more detail.

Speed is extremely important in our ability to 'freeze' the heart. Since the heart is a rapidly moving structure, the only way to image structures within it, is if we can scan as fast as the heart beats or close enough. These scans are gated to the ECG trace which allows us to position our data acquisition accurately to specific phases of the heart beat.

This procedure can only be performed using a multi-slice CT scanner. At the Wellington Hospital our referrers and patients have access to a GE 64-slice

Lightspeed VCT scanner which is undoubtedly one of the fastest multi-slice scanners in the industry.

What to expect when having a Coronary CT Angiogram

It is important for you to relax; there is nothing to worry about. CT scans are comfortable and pain free.

Before the study - Please follow these instructions in preparation for your examination:

- If you have insurance, please ensure that you bring your policy number and have obtained an authorisation number. You will need this when you register
- You can drink normally but avoid tea, coffee or soft drinks. Do not consume any form of caffeine 12 hours prior to the study
- Do not eat any food 4 hours prior to the study
- Continue to take all your prescribed medication as normal and bring your tablets or a list of your medication with you
- We may give you an intravenous beta-blocker before the study if necessary.

During the study:

- You will have an injection of a contrast agent (x-ray dye) for this study. This will highlight your coronary arteries on the scan. You will be asked about allergies before the dye is given because reactions can occur, but very rarely. A thin plastic tube will be placed in your arm and left in place until the examination is completed. You will feel a strange warm sensation as the dye is injected but this should only last a few moments. You may also experience a temporary metallic taste in the mouth
- You will have a 3-lead EKG attached to monitor your heart rate. If your BPM (beats per minute) is high then the Radiologist or Cardiologist supervising the scan may decide to give you an intravenous beta blocker. This will temporarily slow your heart beat down in order for us to achieve a good quality scan
- You will be positioned on the scanning table which is then moved in and out of the scanner. You will hear some mechanical noise but this is normal
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- Nobody can be in the room with you during the scan itself but the Radiographer operating the scanner can both see and hear you throughout the procedure
- Scan time is very short but you will be asked to lie still and hold your breath for up to 20 seconds. Be prepared for this and practice at home beforehand if you need to
- The whole examination should take about 30 minutes

After the study

- You can eat and drink as normal following your examination
- If you had an intravenous beta blocker we recommend that you do not drive afterwards

Results

- The scan will be evaluated and reported on by a specialist Radiologist or Cardiologist. It takes some time for the doctor to make a thorough report so please allow at least one week for the results. The report will be sent to your referrer.
- Please do not ask the Radiographers about the results of the scan because their role is to get the best pictures not to evaluate the pictures. We will **not** give any results to you at the time of the scan or over the phone.

Contacting us

If you have any questions about your examination or there is something you think we should be aware of prior to your procedure, please contact one of the CT team:

Lucy Hall (CT Superintendent)

Yoss Farahmandi (Deputy CT Superintendent)

Sara Vrantsis (CT Radiographer)

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