

## What Is CT Coronary Angiography?

CT Coronary Angiography (CTCA) is a study of the blood vessels that supply blood to the heart. Disease of these blood vessels is considered the main cause of heart attacks.

CTCA is able to assess the degree of narrowing in the coronary arteries and is able to detect both soft and calcified plaque. The anatomy of the entire heart and the adjacent aorta is also assessed.

The scan is performed using the latest multi-slice CT (Computed Tomography) scanner. This examination involves an injection of x-ray dye (contrast) via a cannula (thin tube) into the vein in your arm to outline the arteries during the scan.

CTCA does not replace conventional cardiac catheterisation, and may not be suitable for all patients. A Calcium Score Test will also be performed at the same time as the CT Coronary Angiogram if required.



## Patient Preparation

It is important that you advise the staff if you have asthma, diabetes, any kidney problems, irregular heart rhythm, or have in the past had an allergy to x-ray contrast. If you have any of these conditions, you may not be a suitable candidate for this examination.

You will be given the preparation instructions below at the time of booking:

If you are taking Viagra, Cialis or similar drug, DO NOT TAKE these for 48 hours prior to your examination.

- Fast from solid food for 2 hours prior to your examination.
- No tea, coffee or caffeine on the day of your appointment.
- Drink 4 to 6 glasses of water in the 2 hours prior to your appointment.
- You may go to the toilet.
- No vigorous exercise 24 hours prior.
- Wear comfortable pull on clothing without zippers or metal fasteners.
- A driver for the patient is recommended on the day.

## Duration

The CT Angiogram examination itself takes approximately 20 minutes. However, the entire procedure, including the preparation, scanning and recovery, may take up to 3 hours, particularly if you require beta blockers to slow your heart rate.

## CT Calcium Scoring

The Coronary Artery Calcium Score is a measurement of the amount of calcium in the walls of the arteries that supply your heart muscle, using the CT scan of your heart. This examination demonstrates the amount of hardening of the artery wall (atherosclerosis) that you have. It is used to provide an assessment of the risk of a heart attack in the next five to ten years.

The more calcium (and therefore the more atherosclerosis) that is present, the higher the risk score. A high calcium score does not mean that you will have a heart attack, only that you are much more likely to have one than someone with a low score. Even a person with a score of zero could have a heart attack.

## Procedure

When you arrive in the Radiology department, you will be given a consent form to read and sign prior to the procedure which outlines what to expect and risks associated with this procedure. You will be asked to complete a questionnaire to assess your risk for the calcium score scan. A member of staff will explain the procedure in detail. If you have any concerns or queries, please let the staff member looking after you know.

Staff will perform a medical assessment including measuring your heart rate and blood pressure. A member of the CT team will insert a small cannula into a vein in your arm.

To obtain the clearest possible images of the heart, the heart rate should ideally be less than 55 beats per minute. To achieve this, we may need to administer a beta blocker to slow your heart rate. Beta blockers may be administered half hourly, in doses determined by your initial heart rate.

Once your heart rate has reached the desired rate, you will then be transferred to the CT room and made comfortable on the examination table. While you are on the CT table, ECG (heart) leads are connected to your chest to monitor the heart. Just before the scan, you will receive one or two sprays of GTN (Glyceryl Trinitrate) under your tongue. This works to dilate normal arteries and allows us to better visualise diseased arteries.

The examination table slides you into the centre of the CT machine and some preliminary pictures are taken to confirm the scan position. You will be given breathing instructions to follow.

The calcium score scan is performed first, then the CT angiogram. The x-ray contrast is injected through the cannula in your arm using a pressure pump, and CT images are obtained while the contrast is passing through the arteries. You may feel some warmth in the body during this injection, which passes very quickly. The x-ray contrast circulates around your system for a short while before being passed out in the urine. Occasionally, more than one injection of the contrast may be necessary.

At the end of the procedure, the cannula is carefully withdrawn from the vein and a band-aid applied.

Contrast Medium: As with most drugs, side effects and adverse reactions are possible. Side effects may include a feeling of warmth or a metallic taste in the mouth. These only last a few minutes. Adverse reactions are rare and usually related to an allergy to contrast media.

## Risks

Risks associated with this procedure are low, however include:

- Pain or discomfort at the cannula insertion site or bruising after the procedure.
- Risks associated with the x-ray contrast material include an allergic reaction and reduced kidney function. Minor allergic reactions usually consist of hives. More severe reactions are rare and could result in shortness of breath and facial swelling.
- Very severe reaction is rare and a life threatening reaction is extremely rare (<1: 100,000).
- With any x-ray procedure the benefits of having the examination must be weighed against the potential risk from ionizing radiation. At Coast Medical Imaging, we use the latest available technology to reduce the radiation dose to the patient without compromising image quality.
- It is unusual to have significant side effects from the medication used to slow your heart rate (Metoprolol). Metoprolol always slows your heart and decreases your blood pressure. For a short time you may feel dizzy or lightheaded or fluttery in the chest.
- Infrequently, the procedure may be unsuccessful due to heart rate fluctuations.
- Any procedure potentially can be associated with unpredictable risks including death.

## Post-Procedure

If you are given beta blockers for the examination, it may make you feel lightheaded and faint. After the examination, you will be kept under observation for about half an hour, although it may take longer. Occasionally, the Nitrolingual spray (Glyceryl Trinitrate) can cause a drop in blood pressure or a mild headache. You may eat and drink normally. It is recommended that you refrain from any strenuous physical activity for the remainder of the day. The effects of beta blockers should wear off after a few hours.

## Results

Coast Medical Imaging has an experienced team of consultants, Radiographers and nurses performing CTCA. Our CTCA Radiologists have the necessary credentialing as determined by the Conjoint Committee for the recognition of training in CT Coronary Angiography and to report the study.

The results of the CT Coronary Angiogram will be forwarded to your referring doctor. The time it takes for the report to reach your doctor will vary, depending on the urgency of the examination and whether other information is required prior to the report being released. In most cases, the result will be available within 7 working days. It is important to discuss the results with your referring doctor.



## Where Can I Have a CT Coronary Angiogram?

### COAST MEDICAL IMAGING TUGGERAH

Mariners Centre of Excellence  
Suite G04, Ground Floor  
1 Bryant Drive  
Tuggerah NSW 2259  
(across from Bunnings)

### HUNTER IMAGING GROUP EAST MAITLAND

Suite 1  
Maitland Specialist Centre  
Maitland Private Hospital  
Chisholm Road,  
East Maitland NSW 2323

### HUNTER IMAGING GROUP CARDIFF

48 Thomas Street  
Cardiff NSW 2285

## Questions

If you have any questions prior to your examination, you can speak with a member of our staff by phoning Patient Services on **02 4353 0444**