



**I-MED Radiology  
Network**

Comprehensive care. Uncompromising quality.

# Our cardiac services



## CT coronary angiography (CTCA)

**Computed tomography coronary angiography (CTCA) is a fast, non-invasive procedure that allows visualisation of the heart and coronary arteries, plus other structures within and around the heart.**

CTCA can identify the site and severity of coronary lesions and is commonly used to assess symptomatic patients with suspected coronary artery disease.

CT images are obtained throughout the heart, then processed into high resolution, 3D images which demonstrate the lumen of the coronary arteries. This shows the reporting radiologist the extent of coronary artery disease, as well as the prognostic plaque features. In symptomatic patients with atypical symptoms, CTCA is a valuable tool to confirm or exclude coronary artery disease as the cause of the patient's symptoms.

### Advantages of CTCA

CTCA is an accurate and safe alternative to invasive coronary angiography for the detection of coronary artery disease in the low to intermediate risk patient. It is diagnostically specific with the highest negative predictive value of all tests used in the detection of coronary artery disease.

With 96% accuracy for the detection of coronary heart disease<sup>1</sup>, it will detect both early and late disease.

CTCA is a non-invasive CT imaging procedure that, unlike invasive coronary angiography does not require admission to hospital or puncture of an artery and insertion of a catheter towards the heart.

CTCA has the benefit of fast scan times, sharp image quality and low radiation dose.

CTCA prompts urgent cardiology referral when severe coronary artery disease is present.

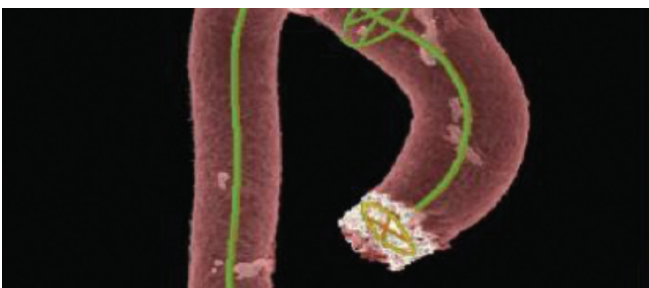


### Why refer for CTCA?

CTCA is of greatest benefit in symptomatic patients who are low to intermediate risk according to population risk stratification tools. The scan result may rule out coronary artery stenosis as the cause of the patient's symptoms, and may identify other causes, such as hiatus hernia or pneumonia. Coronary artery risk factors may include diabetes, hypercholesterolemia, smoking and hypertension.

CTCA also has a role in assessment of asymptomatic patients with a strong family history of premature coronary artery disease. It may be used for higher risk patients where invasive angiography is not desirable or possible; or for patients who have had previous heart surgery.

<sup>1</sup> National Health Survey 2001.



# CT coronary angiography

## What does the procedure involve?

This test is carried out in three parts: preparation, procedure and recovery. The entire procedure takes two to three hours.

### Preparation

Patients should:

- Avoid any caffeine 12 hours prior to the procedure (coffee, tea, chocolate, cola)
- Drink plenty of water prior
- Avoid smoking cigarettes 12 hours prior
- Avoid taking viagra/cialis 24 hours prior
- Continue to take medications as normal, and bring a list of all medications
- Patients should also take any pre-medication prescribed by their referring doctor for the test

### Procedure

- Relevant medical history will be assessed, heart rate and blood pressure taken
- A beta blocker or other medication may be given to slow the patient's heart rate
- An ECG is attached to monitor the heart rate
- An intravenous (IV) cannula is inserted for iodine-based contrast (required for the CT scan)
- Scan time takes approximately 5 minutes, but the patient should plan to be in the clinic for up to two hours in case extra medication is required

### Recovery

- Patient observed and IV cannula removed
- Depending on whether medications were administered, the patient will remain at the clinic until effects have worn off
- We would suggest the patient arranges for someone to accompany them home as they may feel a little unwell
- The patient is advised NOT to drive themselves to the clinic or home after the scan

### Clinical indications

- Suspected coronary artery disease in symptomatic patients, with atypical chest pain or unexplained dyspnoea. Patients with suspected acute coronary syndrome should be referred for urgent assessment
- Atypical chest pain
- Unexplained dyspnoea
- Suspected coronary artery anomalies, including fistula
- Evaluation of coronary arteries in cardiomyopathy
- Coronary stent patency in selected cases
- Assessment of bypass grafts
- Inconclusive stress testing
- Refusal of invasive angiography
- Failed or incomplete angiography

## Need more help?

If you have any questions or enquiries regarding our cardiac imaging services, please contact your local I-MED Radiology clinic or your Account Manager.

### Medicare Benefits Schedule:

Specialist referral only

### Please flag on referral:

- Allergy to IV contrast/iodine
- Irregular heartbeats like atrial fibrillation or frequent ectopic beats
- Patients unable to hold their breath or stay still
- What medications is the patient on? Any Beta blockers?
- Morbid obesity
- Most recent kidney and thyroid function tests results
- Any previous history of kidney or thyroid diseases



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A new study of people with chest pain has found those who get the CT coronary angiogram scan have better outcomes after five years, including a reduced risk of death from heart attack.

#### David Newby

British Heart Foundation John Wheatley Chair of Cardiology, University of Edinburgh

<https://www.nejm.org/doi/full/10.1056/NEJMoa1805971>

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