

CORONARY CALCIUM SCORING

BEFORE THE TEST

- You may continue to take your usual medications.
- **Avoid CAFFEINE and SMOKING for four hours before the exam.**
- If your heart rate is 90 beats a minute or higher, you may be given a drug to slow the rate in order to obtain accurate CT images.
- You should wear comfortable, loose-fitting clothing to your exam. You may be given a gown to wear during the procedure.
- Metal objects including jewelry, eyeglasses, dentures and hairpins may affect the CT images and should be left at home or removed prior to your exam.
- **If you are or might be pregnant, or if you are breast-feeding, please call us and let us know right away.**

ABOUT THE TEST

What is this test?

Cardiac CT, or Coronary Calcium Scoring, is a fast, painless, and non-invasive way of obtaining information about the location and extent of calcified plaque in the coronary arteries; which are the vessels that supply oxygen-containing blood to the heart wall. Plaque is build-up of fat and other substances, including Calcium, which can, over time, narrow the arteries or even close off blood flow to the heart. The result may be painful angina in the chest or a heart attack.

Because Calcium is a marker of coronary artery disease, the amount of Calcium detected on a Cardiac CT scan is a helpful diagnostic tool. The findings on Cardiac CT are expressed as a Calcium score and can help present an overall picture of your heart health.

What are the benefits of Coronary Calcium Scoring?

- Cardiac Computed Tomography (CT) for Calcium scoring is a convenient and non-invasive way of evaluating the coronary arteries.
- Cardiac CT takes little time and causes no pain.
- The exam does not require injection of contrast material and therefore avoids its possible side effects.
- The examination can suggest the presence of Coronary Artery Disease (CAD) even when the coronary arteries are less than 50 percent narrowed. Standard cardiac tests will not reliably detect this level of blockage, and more than half of all heart attacks occur with less than 50 percent narrowing.
- No radiation remains in a patient's body after a CT examination.
- X-rays used in CT scans usually have no side effects.

What are some common uses of the procedure?

The goal of Cardiac CT for Calcium scoring is to detect CAD at an early stage when there are no symptoms and to determine its severity. It is a screening study that may be recommended by a physician for patients with risk factors for CAD but no clinical symptoms. The procedure is most often recommended for men aged 45 years or older and for women who are aged 55 and above or who are postmenopausal. Some patients choose to have the test on their own even if their physicians have not recommended it, in order to detect early-stage CAD.

The major risk factors for CAD, other than age, are:

- Abnormal high blood cholesterol levels
- Family history of heart disease
- Diabetes
- High blood pressure
- Smoking
- Overweight or obesity
- Being physically inactive

What does the equipment look like?

The CT scanner is typically a large machine with a hole, or tunnel, in the center. A moveable examination table slides into and out of this tunnel. In the center of the machine, the X-ray tube and electronic X-ray detectors are located opposite to each other on a ring, called a gantry, which rotates around you. The computer that processes the imaging information and monitor are located in a separate room.

What will happen to me during the test?

The technologist begins by positioning you on the CT examination table laying flat on your back. Straps and pillows may be used to help you maintain the correct position and to remain still during the exam.

Electrodes (small metal discs) will be attached to your chest and to an electrocardiograph (ECG) machine that records the electrical activity of the heart. This makes it possible to record CT scans when the heart is not actively contracting.

Next, the table will move quickly through the scanner to determine the correct starting position for the scans. Then, the table will move slowly through the machine as the actual CT scanning is performed.

Patients are periodically asked to hold their breath for periods of 20 to 30 seconds while images are recorded.

When the examination is completed, you will be asked to wait until the technologist determines that the images are of high enough quality for the radiologist to read.

The actual CT scanning is usually completed in less than 10 minutes.

CT exams are painless, fast and easy. When you enter the CT scanner, special lights may be used to ensure that you are properly positioned. With modern CT scanners, you will hear only slight buzzing, clicking and whirring sounds as the CT scanner revolves around you during the imaging process.

You will be alone in the exam room during the CT scan, however, the technologist will be able to see, hear and speak with you at all times.

Are there after-test restrictions for me to follow?

- **You will be restricted from driving after the test and the remainder of the test day.**
- If you received anesthesia; The nurse will give you instructions on when you can eat, drink and return to normal activities.
- If you did not receive anesthesia; you may resume your usual activities and normal diet immediately.

How will I know the results of my test?

Your test results will be sent to the physician who ordered the test. During your follow-up appointment, your referring physician will discuss with you the results of your test.

A negative Cardiac CT scan that shows no calcification within the coronary arteries suggests that atherosclerotic plaque is minimal and that the chance of CAD developing over the next two to five years is very low.

A positive Cardiac CT scan means that means that CAD is present, regardless of whether or not the patient is experiencing any symptoms. The amount of calcification—expressed as a score—may help to predict the likelihood of a myocardial infarction (heart attack) in the coming years.