

# Community Hospital Heart Wellness Scan

## Computed Tomography Coronary Calcium Scoring

***Statistics show that for 35-50% of the population their first symptom of cardiac risk will be sudden death due to a heart attack. Heart disease is the number one killer of both men and women in the US.***

**Community Hospital is committed to being the leader in non-invasive cardiac imaging and testing for western Colorado and eastern Utah. Utilizing the state-of-the-art Siemens 64-slice scanner we are able to provide accurate coronary artery calcium scoring. Calcium scoring is a relatively new screening tool used to help detect the presence of calcium in the coronary arteries which is a marker for arteriosclerosis (coronary artery disease or plaque).**

**Community Hospital is pleased to be able to offer this Heart Wellness screening service affordably to everyone.**

Computed Tomography Coronary Calcium Scoring utilizes high resolution, ECG synchronized CT imaging of the heart with attention to the coronary arteries to evaluate for calcium buildup within heart tissue. Coronary calcification is analyzed using a Siemens 64-slice CT machine and Siemens calcium scoring software.

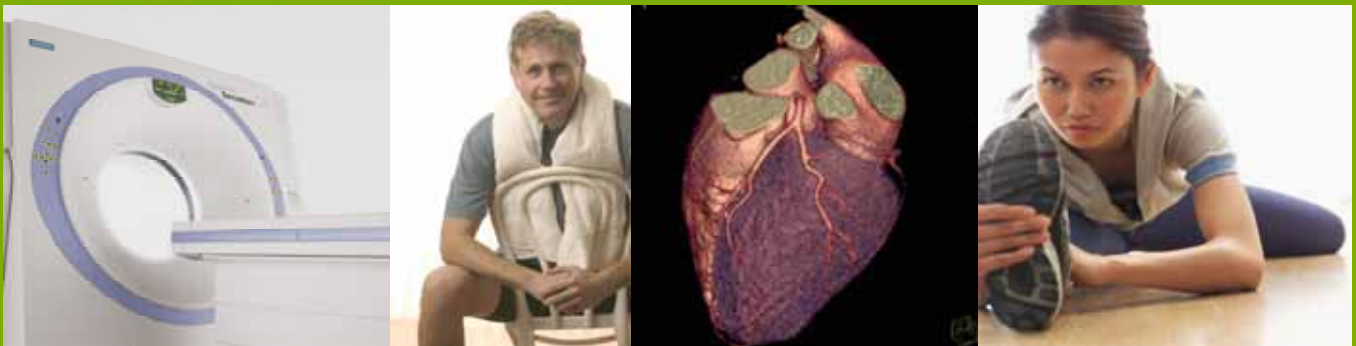
This is an outpatient, non-contrast screening procedure of the heart. The procedure takes approximately 30 minutes, which includes guest check-in, preparation time, and scan duration.

Computed Tomography of the coronary arteries evaluates the four main branches of the coronary artery tree for calcium detection. Using the calcium scoring software each branch is given a calcium score relative to the number and concentration of lesion detected. The score for each branch is then added up for the total calcium score of the heart. According to current clinical correlations, coronary arteriosclerosis including unstable plaque is very unlikely when no calcifications are present and a significant luminal obstructive disease is also very unlikely. Most patients without coronary calcifications have angiographically normal coronary arteries.

**To schedule your Heart Wellness Scan please call: (970) 256-6216**

**Payment for the procedure is accepted by cash, credit card or check.**

**This procedure is not an insurance covered benefit.**



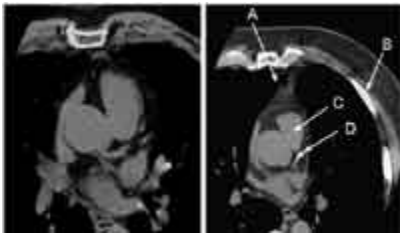
# Community Hospital Heart Wellness Scan Calcium Scoring

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## What is Cardiac CT for Calcium Scoring?



Computed tomography, also known as CT or CAT scanning, uses a special machine to obtain multiple x-ray images of any part of the body. The images are much more detailed than those provided by conventional x-rays. In addition, CT can display many different types of tissue including blood vessels. Modern scanners use a technique called spiral or helical CT to obtain images from many angles. Computerized processing of these images creates cross-sections, or slices, of the area of interest. The images can then be examined on a computer monitor or printed out.

Cardiac CT for calcium scoring is a non-invasive way of obtaining information about the location and extent of calcified plaque in the coronary arteries—the vessels that supply oxygen-containing blood to the heart wall. Plaque is a build-up of fat and other substances, including calcium, which in time can 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. Calcium is a marker of coronary artery disease. The findings on cardiac CT, expressed as a calcium score, may help decide what measures can be taken to avoid these events. Another name for this test is coronary artery calcium scoring.

## What are some common uses of the procedure?

The goal of cardiac CT for calcium scoring is to detect coronary artery disease (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 if you have risk factors for CAD but no clinical symptoms yet. The procedure is most often suggested for men aged 45 years or older and for women who are aged 55 and above or are postmenopausal. Some patients choose to have the test on their own even if their doctors have not recommended it, in order to discover early-stage CAD if present, or reassure themselves that they probably do not have advanced CAD.

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

- Abnormally high blood cholesterol levels
- A family history of heart disease
- Diabetes
- High blood pressure
- Cigarette smoking
- Being overweight or obese
- Being physically inactive

## How should I prepare for the procedure?

No special preparation is necessary in advance of a cardiac computed tomography (CT) examination. You may continue to take your usual medications, but should avoid caffeine and smoking for four hours before the exam. At the time of the exam you will be asked to disrobe above the waist, put on a gown, and remove any jewelry that could interfere with the CT scan. 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.

## What does the equipment look like?

The CT scanner is a large, square machine with a circular opening. A patient examination table moves up or down, as well as into and out of the center of the machine. Within the machine, a rotating gantry with an x-ray tube and multiple detectors moves around the patient's body to produce the images, making clicking and whirring noises as the table moves. The unit is attached to a computer in an adjoining room.

## How does the procedure work?

During a computed tomography (CT) scan, the rotating gantry will emit x-rays that pass through the part of the body being examined—in this case the heart and coronary arteries. In spiral or helical CT, the patient passes through the scanner as the gantry rotates. Multiple detectors mounted on the gantry along with the x-ray tube record the radiation leaving the body. The result is that the x-ray beam follows

a spiral path. The recorded images are reconstructed by computer using a special software program. Recently developed spiral CT scanners produce high-quality images in less than 10 seconds. This is especially important for elderly patients and those who cannot hold their breath for the required time.

A negative cardiac CT scan that shows no calcification within the coronary arteries suggests that atherosclerotic plaque is minimal at most, and that the chance of coronary artery disease developing over the next two to five years is very low. A positive test means that coronary artery disease is present even if you have no 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.

Calcium Score	Presence of Plaque
0	No evidence of plaque
1-10	Minimal evidence of plaque
11-100	Mild evidence of plaque
101-400	Moderate evidence of plaque
Over 400	Extensive evidence of plaque

## How is the procedure performed?

During cardiac computed tomography (CT) for calcium scoring, you will lie on your back on the table attached to the CT scanner. The table slides through the opening in the scanner while, at the same time, a cylinder around the opening rotates around your body. The table will move forward slightly every few seconds so that you will be in the proper position for each new cross-section. This process continues until the region of the heart has been thoroughly covered. Electrodes (small metal discs) will be attached to your chest and to an ECG machine that records the electrical activity of your heart. This makes it possible to record CT scans at the best times – when the heart is not actively contracting. You will be asked to hold your breath for periods of 20 to 30 seconds while images are recorded.

## What will I experience during the procedure?

Cardiac computed tomography for calcium scoring is a relatively simple procedure that takes only about five to 10 minutes. You will be alone during the scan, but the radiologic technologist who performs the exam can see and hear you from the nearby control room and can speak to you at any time. If you become anxious when in confined spaces, you may have to take medication to stay relaxed. This does not happen often because the cylinder within the scanner does not enclose your entire body and your head remains outside the unit. Exposure to x-rays causes no discomfort. You may feel some discomfort because the table is hard, and the room may be chilly because it has to be air-conditioned to keep the equipment regulated.

## Who interprets the results and how do I get them?

Radiologists and cardiologists with advanced training in cardiac CT will analyze the images and provide a report to your primary care or referring physician. You will be sent the results directly from the interpreting physician.

## What are the benefits vs. risks?

### Benefits:

- Cardiac computed tomography (CT) for calcium scoring is a convenient and noninvasive way of evaluating the coronary arteries.
- The calcium score gives an idea of whether coronary artery disease (CAD) is present despite a lack of symptoms, or is likely to develop in the next few years.
- 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 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.

### Risks:

- The exam exposes the patient to a limited amount of radiation. The dose is similar to that from 10 chest x-rays and about 10-20 percent of that received during a diagnostic cardiac catheterization procedure.
- Women should always inform their doctor, x-ray technologist or nurse if there is any possibility that they are pregnant.
- Cardiac CT sometimes is positive even though there is no significant blockage of the coronary arteries. As a result, the patient may undergo further tests that are not necessary and these tests might cause side effects.

## What are the limitations of Cardiac CT for Calcium Scoring?

- Not all calcium deposits in the coronary arteries mean that there is a blockage, and not all blocked arteries contain calcium.
- The earliest form of coronary artery disease, soft plaque, cannot be detected by cardiac computed tomography (CT).
- Not all health insurance plans cover cardiac CT for calcium scoring.
- A high heart rate may interfere with the test. If your rate is 90 or more beats per minute, you may have to take medication or reschedule the exam.
- Men less than 35 years of age and women younger than 40 are less likely to benefit from cardiac CT for calcium scoring unless there are risk factors such as diabetes or a strong family history of heart disease. Men and women older than 75 gain less benefit from cardiac CT calcium scoring.