

Other TESTS that you may need to be referred to

1. Cardiac Computed Tomography (Multidetector CT, or MDCT)

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What is Computerized Tomography (CT)?

CT is a non-invasive test that uses X-rays to make pictures of your heart. Modern CT scanners (multidetector CT, or MDCT) work very fast and detailed. They can take images of the beating heart and show calcium and blockages in your heart arteries.

Quick Facts

- MDCT is a very fast type of computed tomography (CT) scan.
- MDCT creates pictures of the healthy and diseased parts of your heart. These pictures can be viewed from any angle.
- The pictures can help your doctor find problems in your heart's structure and in how your heart pumps blood.
- EBCT can show blockages — caused by [cholesterol deposits](#) — in coronary arteries that supply blood to your heart.

Why do people have MDCT?

Doctors may ask you to have MDCT when other tests, such as [chest X-rays](#), [electrocardiograms \(ECG\)](#), [echocardiograms \(echocardiography\)](#), or [stress tests](#), don't give them enough information about your heart.

Through MDCT, your doctors may gather additional information on:

- Your heart's structure and how well your heart pumps blood
- Scarring of the heart muscle caused by a [heart attack](#)
- Fluid in the pericardial sac that covers the surface of the heart
- The amount of plaque build-up and narrowing of your coronary arteries
- Any abnormalities in the large blood vessels leaving the heart
- Your risk for a heart attack

Can MDCT help show if you have heart disease?

When contrast dye (iodine) is given during the scan, MDCT can be used to show blockages in your heart arteries. This is useful in patients with chest discomfort to see if the discomfort comes from lack of blood flow to the heart muscle caused by blocked heart arteries ([angina](#)). If the heart arteries are normal, your doctor can confidently look into other causes of chest pain that aren't related to the heart.

With contrast dye, MDCT can also be used to check if [coronary artery bypass grafts](#) remain open, check for [congenital heart defects](#) (problems present at birth) and also check how your ventricles are working.

Without contrast dye, MDCT can be used to measure the amount calcium in your heart arteries (“calcium score”). Your calcium score gives doctors an idea of how much plaque there is in your heart arteries that hasn’t caused problems yet. Your calcium score may help predict your [risk of a heart attack](#), and tell you and your doctor how much more aggressive you should be to reduce your risk factors. This is particularly helpful if you are at “intermediate” risk.

Calcium scoring is not recommended for routine screening of people who don’t have symptoms of heart disease and have a low risk of heart attacks. If you’ve already had a heart attack, coronary bypass surgery or a [coronary stent \(PDF\)](#), calcium scoring won’t provide any additional information.

Can I have MDCT instead of a coronary angiogram?

MDCT is not a substitute for a [coronary angiogram \(PDF\)](#) ([cardiac catheterization](#)). Coronary angiography is the most accurate method for showing blockages in the coronary arteries. It also gives very specific information about how your heart is working.

What are the risks of MDCT?

MDCT exposes you to a low dose of X-rays. Experts disagree if X-rays at such low doses can cause cancer, but the possibility exists that no dose of X-rays, however low, is completely safe. Don’t take the test if you’re pregnant. Don’t take the test if your risk for a heart attack is low, or if there is no other reason (chest discomfort) to think that you have heart trouble.

Some people have allergic reactions to the contrast dye that’s sometimes used in the test. Before the test, tell your doctor if you’re allergic to dyes, iodine or shellfish.

How do I prepare for MDCT?

Ask your doctor if he or she plans to give you contrast dye during the test. If so, don’t eat for four to six hours before the test. If contrast dye won’t be used, don’t eat for two hours before the test.

What happens during EBCT?

Technicians perform MDCT in hospitals or special outpatient clinics.

- During the test you lie down on a table connected to the MDCT scanner.
- Electrodes will be attached to your chest to monitor your ECG. The ECG is also needed to help the computer that is connected to the CT scanner create clear pictures of your heart.
- When you are ready, the table slowly moves inside the machine. The scanner arches around you but doesn’t touch you. The exam is painless.
- If a contrast dye is used, it is injected through an intravenous line (IV) placed in an arm vein.
- The technologist will watch you closely through a window. You can talk to him or her through a two-way intercom.
- The technician will ask you to hold your breath for short periods.
- MDCT scanning takes about 5-10 minutes.

What happens after MDCT?

- Most people can usually go back to their normal activities right away.
- Your doctor will get a written report of the test results. You should make an appointment with that doctor to discuss the results and next steps.

Other important steps include:

- If you are overweight, set your initial goal at a loss of 5 to 10 pounds. If you need to lose more, a weight loss of 1 to 2 pounds per week is recommended until you reach a healthy weight.
- Be physically active. Walk, ride a bike, or do other types of moderate physical activity for at least 150 minutes per week, preferably spread throughout the week. Visit our physical activity section. Learn more about [physical activity](#).
- If you smoke, quit. Avoid second-hand smoke. Learn more about [quit smoking](#).
- If you drink alcohol, have no more than one drink a day if you're a woman, two if you're a man.

How can I learn more about MDCT?

Talk with your doctor. Here are some good questions to ask:

- What other tests should I have?
- Can I still have the test if I am allergic to iodine?
- Do you think the small possible risk of cancer related to X-rays is justified compared to my risk of having heart trouble?

What can I do to help?

You can take steps to make your heart healthier:

- Know your [blood pressure numbers](#). Work with your doctor to reach a goal blood pressure of less than 120/80 mm Hg.
- Lower your [blood cholesterol levels](#) by eating healthy foods (high in fiber and low in saturated fat, trans fat and cholesterol) and taking your [cholesterol lowering medicine](#).
- If you have [diabetes](#), work with your doctor to keep your [blood sugar under control](#) and reach and maintain an HbA1c of less than 7 percent. HbA1c (hemoglobin A1c) is a blood test that shows your average blood sugar level for the previous 2 to 3 months.