

Coronary CT Angiogram

What is a coronary CT angiogram?

A **CT (computed tomography) test** uses x-rays to create a clear, detailed image of body tissues. A coronary CT angiogram uses this technology to help your doctor detect:

- Problems with the heart muscle or valves
- Problems with the aorta (the main artery that leaves your heart to send blood to the body)
- Blood clots in the lungs
- Infection or disease in the pericardium (the sac that surrounds the heart)

In a **coronary CT angiogram**, special x-ray equipment takes many images from different angles by rotating an x-ray tube around the body. A computer then uses the information to create detailed images. The images look like thin cross-sections (“slices”) of the area being studied.

This test uses **contrast** (a special dye that shows up on x-rays). The contrast is injected in a vein. During the test it highlights the arteries that feed your heart.

How should I prepare for the test?

You'll meet with your doctor to learn about the test and how to prepare. Here are some tips:

- **Tell your doctor about any allergies**, especially if you've had a reaction to contrast dye in the past.
- **Tell your doctor about any medical conditions you have**, especially asthma, kidney problems, or heart failure.
- **Tell your doctor if you are pregnant or may be pregnant.** The x-rays used in a coronary CT angiogram can harm a developing fetus, so you should not have this test if you could be pregnant.
- **Tell your doctor** about all **medications** you take, including vitamins and herbal supplements.



A coronary CT angiogram takes about an hour.

- **Follow your doctor's advice about medication.** Here are some directions your doctor might give:
 - If you take metformin (Glucophage), you will need to stop taking it the day of the test and wait to start taking it again until your doctor advises. The contrast dye used in the test can cause problems for patients taking metformin. Check your blood glucose for two days after the exam, and call your doctor if it's over 300 mg/dL.
 - You might get a prescription for a beta blocker medication to take before the test. The beta blocker slows your heart rate so the test can show more detail.
- **Do not have any caffeine or stimulants for 12 hours** before the test. These include coffee, tea, energy drinks, diet aids, and some over-the-counter medications.
- **Do not eat, smoke, or use tobacco for 4 hours** before the test.

What happens before the test?

Here's what happens when you arrive at the hospital or clinic for the test:

- **Preparation.** You'll check in and put on a hospital gown. A technician will place electrodes (sensors that connect to a machine) on your chest. These help monitor your heart's activity during the test.

- **IV (intravenous line).** A technician will place an IV in your wrist or arm.
- **Medication.** You might receive a dose of beta blocker medication to slow your heart rate.
- **Placement.** You will lie down on an exam table that can slide into the opening in the middle of the CT machine. You'll rest your arms over your head during the test.

What happens during the test?

The test itself takes about 20 minutes. Here's what happens:

- **Contrast dye.** If contrast dye is injected into your vein, you may feel some warmth in the area for a few minutes.
- **Starting the scan.** The exam table will slide into the CT machine. A scanner inside the machine will take a series of images. The technician will control the scanner from another room, but he or she can see you and talk with you.

- **Lying still.** Movement can blur the images, so you will need to lie still during the scan. The technician will also ask you to hold your breath for short periods of time.

What happens after the test?

- When the scan is finished, the technician will remove the IV line and electrodes.
- Drink plenty of water the rest of the day to flush the contrast dye out of your body.
- **Your doctor will tell you the results in a follow-up appointment.** The information gained during the coronary CT angiogram will help your doctor diagnose your condition and propose a treatment plan.

Talking with your doctor about the coronary CT angiogram

The table below lists the most common potential benefits, risks, and alternatives for a coronary CT angiogram. Other benefits and risks may apply in your unique medical situation. Talking with your doctor is the most important part of learning about the risks and benefits. If you have questions, be sure to ask.

Potential benefits	Risks and potential complications	Alternatives
<p>A coronary CT angiogram:</p> <ul style="list-style-type: none"> • Can provide information to help diagnose a variety of heart problems • Is painless and relatively fast, when compared with other heart tests 	<p>While CT scans are safe, they have the following risks and potential complications:</p> <ul style="list-style-type: none"> • Some people experience itching or a rash as a reaction to the contrast dye. This is temporary and goes away on its own. • In rare cases, the contrast dye can cause a severe allergic reaction that must be treated with medication. • For some people, contrast dye can cause reduced kidney function (or even kidney failure in very rare cases) — tell your doctor or the imaging technician if you have kidney disease or diabetes. • Because CT scans use x-rays, you're exposed to a small amount of radiation that can cause a slight increase in your lifetime cancer risk. (For more information, see Intermountain's <i>Guide to Understanding Radiation</i>.) 	<p>Alternatives include other tests that provide images of your heart or arteries:</p> <ul style="list-style-type: none"> • Cardiac MRI (magnetic resonance imaging) • Chest x-ray • Angiogram • Echocardiogram • Cardiac nuclear imaging