

Cardiac Stress Testing

What is cardiac stress testing?

Cardiac stress tests measure the health of your heart while it is working hard. In a stress test, you exercise to increase your heart's workload, which increases the blood flowing to your heart. If you are unable to exercise, medicine is used to increase the blood flow to the heart. Your heart's response is measured in various ways based on your condition and the type of stress test you have, which may include an electrocardiogram (ECG) and imaging tests. These tests help your doctor assess blood flow to different heart muscle areas.

Why are stress tests helpful?

Cardiac stress tests can reveal problems that don't show up while your heart is at rest. Your doctor might order a stress test if you have chest pain that comes and goes, difficulty breathing, swollen ankles or feet, an irregular heart rate, tiredness, or nausea. Cardiac stress tests can reveal:

- Partial blocks in the arteries that feed your heart
- Changes in your heart's ability to pump blood
- The progress of congestive heart failure
- Heart rhythm problems that show up only when your heart is beating faster

How do I prepare?

Before the test, your healthcare provider will ask you to:

- List medicines you are taking including over-the-counter drugs and herbal supplements. Also tell your doctor if you are allergic to any medicine.
- Describe any symptoms you have during exercise such as heart rhythm problems, nausea, chest pain, or breathing problems.

- Follow all instructions about whether or not to stop certain medicines or avoid eating before the test.
- Wear comfortable clothes and walking shoes if your test requires exercise to increase your heart rate.

What happens during a stress test?

You will be monitored. To monitor your blood pressure and the oxygen in your blood, a cuff may be placed on your arm and a clip may be put on your finger. Electrodes (sticky patches) may be put on your chest to monitor your heart's electrical activity.

You will increase the workload on your heart. If you can exercise, you will walk on a treadmill or ride an exercise bike to make your heart work harder. If you can't exercise during a cardiac stress test, you will receive medicine through an IV.

Here's what happens in each case:

- **If you exercise**, your effort will increase gradually. For example, the treadmill will start slowly. It will become faster and steeper every few minutes, until you are exercising as hard as you can or until you reach a target heart rate.
 - If you have chest pain, nausea, or just don't feel well, tell the technician. The treadmill can be stopped at any time.
 - Wait for the treadmill to stop completely before you step off.
 - Tell the technician when you feel you can exercise for one more minute. Depending on the type of test, it might be important for your technician to know when you are almost at a stopping point.

- **If you have medicine through an IV** during a cardiac stress test, here are some things to remember:
 - The medicine may make you feel like you are exercising. You may also have some minor tingling, light-headedness, headache, or nausea.
 - Tell your healthcare providers if you have chest pain, a fluttering heartbeat, trouble breathing, or sweating. They can make sure you are safe, and may be able to give you medicine to reverse the symptoms.

Healthcare providers will record measurements.

The types of stress tests include:

- **Electrocardiogram:** The sticky patches on your chest send signals to a machine that measures your heart’s electrical activity.
- **Stress echo:** Before you exercise, a technician moves a device called a transducer over your chest. The transducer sends sound waves that bounce back to create images of your heart. After you exercise, the technician uses the transducer again to take images while your heart is beating hard.
- **Nuclear imaging:** A technician injects a radioactive “tracer” through the IV. A special camera records where the tracer collects in your heart and the parts of your heart that have good blood flow.

What happens after the test?

When the test is finished, the technician removes the arm cuff, finger clip, and electrodes as well as the IV if you had one. You can usually go home the same day.

When should I call my doctor?

Contact your doctor if you have heart symptoms after the test such as:

- A racing or fluttering heartbeat,
- Chest pain
- Trouble breathing

What are the risks and benefits?

The table below lists the most common potential benefits, risks, and alternatives for stress testing. Talk to your doctor about other benefits and risks that may apply to your unique medical situation. Be sure to ask any questions you might have.

Possible benefits	Risks and possible complications	Alternatives
Stress testing can reveal information about specific heart problems, and how those problems affect your heart when it is working hard.	<p>The risk of a serious complication is extremely low. Risks can include:</p> <ul style="list-style-type: none"> • Symptoms caused by a faster heartbeat, such as chest pain, high blood pressure, irregular heartbeats, dizziness, nausea, heart attack, or sudden cardiac arrest. You will be carefully monitored during the test to prevent these symptoms or to react quickly if they occur. • Exposure to radiation, which can slightly increase your lifetime cancer risk (for more information, see Intermountain’s <i>Guide to Understanding Radiation</i>). • Allergic reaction to medicine that may be given if you can’t exercise. 	There are no other alternatives that record the specific information measured during a cardiac stress test.

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