

## **What is a Cardiolite Stress Test?**

A stress test with Cardiolite® is a way to determine if your heart muscle is getting the blood supply it needs. The test also helps find out how well your heart is working. To perform the test, a small amount of Cardiolite® is injected into your blood. A special camera is then able to take pictures of your heart. Although Cardiolite® is a radioactive material, it is safely cleared from your body by natural processes. You will be exposed to the same amount of radiation as in a simple X-ray or CAT (CT) scan. Millions of nuclear medicine exams are safely performed each year. Exercise and pharmacologic stress testing should be performed only under the supervision of a qualified doctor. On rare occasions, a very small number of people who are given Cardiolite® have serious allergic side effects, including skin rashes. The most common complaints include headache, chest pain, nausea, and abnormal taste and smell. There may also be some side effects that only the doctor will notice while your heart is being monitored.

### **How does the test work?**

A stress test with Cardiolite® usually consists of taking pictures of your heart in two phases: while resting and after stress.

- Cardiolite® will be injected while you are at rest and the special camera will take pictures of your heart.
- Cardiolite® will be injected during the stress portion of the test and pictures will be taken of your heart.

If you are unable to exercise, you may be given a drug, by injection, intended to have a similar effect on the heart to that of exercise. The doctor will tell you how many phases of the test there will be. If there are two phases, the doctor giving the test will inform you if the exercise or rest portion of the study will be done first, and if the entire test can be completed in 1 day or on 2 separate days. These two sets of pictures allow the doctor to compare the amount of blood flowing through your heart muscle during rest and under stress. In both portions of the test, the pictures are usually taken between a half-hour and 1 1/2 hours after you receive Cardiolite®.

### **Why do I need this test?**

Your doctor has asked for a stress test with Cardiolite® in order to get more accurate and complete information about how your heart is functioning. Your heart receives life-giving blood from vessels called coronary arteries. If these arteries become partially blocked or narrowed by the buildup of fatty materials (lipids), your heart may not receive the blood it needs to function properly. This narrowing of coronary arteries is called coronary atherosclerosis or, more commonly, coronary artery disease (CAD). While your heart may function normally at rest, your heart muscle may not receive enough blood when under stress (for example, when you are exercising). This often results in chest pain called angina pectoris. On the other hand, there may be no outward physical signs of the disease. If CAD is limiting blood flow to a part of your heart, a stress test with Cardiolite® may be useful in detecting the disease and assessing how this may affect you. With this information, your doctor can determine the proper course of treatment to keep you healthy.

### **Risk factors for coronary artery disease (CAD)**

If CAD goes undetected or untreated, there is the potential for more serious complications to occur, such as a heart attack. Fortunately, there are some risk factors that alert your doctor that you may be at risk for CAD:

- Family history of heart disease
- Being overweight
- Lack of exercise
- Smoking
- Poor diet and excessive intake of alcohol
- Presence of certain conditions (*i.e.*, high blood pressure [*hypertension*], diabetes, high cholesterol)
- Hormone status (*as women pass through menopause, their risk of CAD increases; see also "Special information for women"*)
- Increasing age
- Race

These are some of the risk factors that may assist your doctor in determining your likelihood of having or developing CAD. Unfortunately, they do not provide a complete and accurate answer. Your doctor wants to have as much information as possible before deciding how to treat your symptoms.

### **Reasons your doctor may want to perform this test**

Besides the risk factors, there are several reasons for your doctor to recommend an imaging test with Cardiolite®.

- If you have chronic chest pain or angina, Cardiolite® images provide valuable information as to why you may be experiencing chest pain.
- If you have recently experienced a heart attack, Cardiolite® images can help your doctor determine the damage your heart suffered during the attack.
- If you are about to undergo surgery, Cardiolite® images can help the doctor see if your heart is strong enough to withstand the stress of a long and/or complicated medical procedure.
- Additionally, this test reliably identifies CAD in women, which may lead to earlier diagnosis and treatment (*see "Special information for women"*).

### **What should I do before the test?**

- Talk to your doctor first about anything you must do to prepare for your test, or any restrictions in diet, medication, or activities prior to your test.
- You may be asked not to eat or drink several hours prior to the test. This will prevent the possibility of an upset stomach, or nausea, which may accompany vigorous exercise after eating.
- Your doctor may ask you to stop taking certain heart medicines prior to the stress exam. Some heart medicines may interfere with the accuracy and effectiveness of the exam.
- If you will be exercising for the stress exam, you should wear comfortable footwear for brisk exercise on a treadmill (a moving platform you walk on) or stationary bicycle. You will work hard during the test and comfortable clothing will make it easier for you. Slacks or shorts are preferred for the exercise portion of the exam. A hospital gown may be provided on the day of the test.
- Prior to the stress test with Cardiolite®, you may be asked to sign a consent form. Please read the form carefully. If you have any questions about the procedure, ask the doctor supervising the test. He or she can explain the entire procedure before it begins.

**What will happen to me during the test?**

Several small pads called electrodes will be placed on your chest. These pads will be connected to an electrocardiograph (ECG) monitor so that your heart rhythm can be watched closely throughout the stress portion of the test. An intravenous (IV) line will be placed in your arm. This line will be used to inject Cardiolite® into your bloodstream during stress activity. The IV line will be removed soon after the test is completed.

**Exercise stress activity**

If your doctor has specified an exercise test, you will begin by walking on a treadmill or by pedaling a stationary bicycle. If you walk on a treadmill, it will move very slowly at first, then increase in speed. If you pedal a stationary bicycle, it will feel easy to pedal at first, then gradually get harder. As you exercise longer and harder, your heart rate and blood pressure will rise. This is normal, and they will be monitored along with your ECG.

You will be asked to exercise during the entire stress exam. Expect to exercise to your maximum ability, which may take 10 minutes or more. If you experience any unusual symptoms at any time, such as feeling lightheaded, immediately tell the doctor performing the test. Adjustments will be made to the exercise test, depending on your symptoms, blood pressure, ECG, or degree of fatigue. To increase the effectiveness of the test, it is important to exercise as long as you are able.

Cardiolite® will be injected through the IV line approximately 1 minute before the end of exercise. It is immediately carried to the heart by the blood. About one-half to 1 1/2 hours later, a special camera that can detect radiation will take pictures of your heart. The camera will be placed close to your chest while you are lying flat on the imaging table, or sitting in a special chair.

**Pharmacologic stress activity**

If you are unable to exercise for the test, your doctor may decide to use a drug, or pharmacologic stress agent. Such drugs are given via an IV line and simulate the effects of exercise. This increases the flow of blood to the heart. Even though you are undergoing stress by pharmacologic means, the doctor may ask you to perform low-level exercise such as using a handgrip, walking in place, or some other small movement. These simple actions will make the stress caused by the drug more comfortable. It may also reduce any side effects. If you have any strange feelings, be sure to mention them to the testing doctor during the test. Once you receive the drug that causes stress, Cardiolite® will be injected and pictures will be taken with the special camera. The camera will be placed close to your chest while you are lying flat on the imaging table, or sitting in a special chair.

**Resting portion of the test**

For the resting portion of the test, an ECG may not be needed. Cardiolite® will be injected and, about one-half to 1 1/2 hours later, the camera operator will begin taking pictures of your heart. The camera will be placed close to your chest while you are lying flat on the imaging table, or sitting in a special chair.

During the test, the camera will take pictures at various angles. It will take 15-30 minutes to complete the imaging portion of the exam. It is important for you to remain very still while the pictures are being taken.

The doctor will discuss the results with your own doctor and submit a written report. Your doctor will then explain the test results to you. If your scan is normal, your doctor may ask you to continue any diet or activity that keeps you healthy. Medical research has shown that patients with a normal Cardiolite® stress scan have greater than 99% likelihood of not suffering or dying from a heart attack within the next year. However, your doctor may still ask you to change some of your diet or activities to ensure that you avoid further risk. If your scan is not normal, your doctor will discuss the best treatment options with you, as well as any changes you may need to make.

### **Special information for women**

More attention is being given to heart disease in women. This is very important because women do not always respond to tests and procedures in the same way as men. Sometimes, tests that work well for men do not produce useful results for women. Fortunately, there are many methods being used to detect heart disease in women. And, of course, some of these methods work better than others.

### **Cardiac imaging in women**

Because the special camera is outside of your body and must "see through" your chest, there is a possibility for your left breast to cast "shadows" or artifacts over the heart. If you have breast implants, be sure to inform your doctor, as these may also cause artifacts. Artifacts distort the actual look of the heart and increase the potential for a false positive diagnosis. A false-positive test indicates that you have disease when none is actually present.

False-positive results may be reduced by using Cardiolite®, ensuring that the images obtained will provide a clear and accurate picture of your heart. More accurate information allows your own doctor to make reliable decisions about your health.

Please visit The Difference in a Woman's Heart® website at:

[The Difference In A Woman's Heart®](#) to find out more about the following topics:

- Heart disease in women
- Risk factors
- How you can reduce risks
- Symptoms women may experience
- Methods of CAD detection that are best suited for women

This information should not replace a discussion with your doctor. Please consult your doctor for more information on the procedures described on this page. This is not intended to provide complete information about your stress test or Cardiolite®.

### **Precautionary Information**

Exercise and pharmacologic stress testing should be performed only under the supervision of a qualified doctor.

On rare occasions, a very small number of people who are given Cardiolite® have serious allergic side effects, including skin rashes. The most common complaints include headache, chest pain, nausea, and abnormal taste and smell. There may also

be some side effects that only the doctor will notice while your heart is being monitored.

The Cardiolite® administered during this test contains a small amount of radioactivity. The amount of radiation you will be exposed to is similar to that from an X-ray or CAT (CT) scan. If you are pregnant, suspect you may be pregnant, or are a nursing mother, discuss this with your doctor before undergoing the procedure. If your doctor has decided to use a special drug to cause stress, instead of exercise activity, be sure to discuss your diet and other medicines prior to receiving the drug. It is important that your doctor know all medicines that you are taking. This includes any prescription medicines, over-the-counter drugs, or diet supplements.