



Cardiac Nuclear Medicine Exam

How to prepare for your exam

A cardiac nuclear medicine exam is used to study the structure and function of the heart. Read this handout to learn how to prepare for the exam, how the exam works, how the exam is performed, what you may feel during the exam, and how to get your results.

What is a cardiac nuclear medicine exam?

A nuclear medicine exam uses radioactive compounds to detect and treat many diseases. It is a form of radiology, because radiation is used to capture pictures of the human body.

Cardiac nuclear medicine refers to tests that are used to check the structure and function of the heart.

How does the exam work?

Blood vessels of the heart are best studied by watching the changes in blood flow to the heart due to exercise. Therefore, you will undergo a stress test – most often through physical exercise – to make your heart work harder than normal. You will then be given a radioactive compound, called a tracer. The tracer will collect in your heart, and will give off gamma rays. The gamma camera detects the rays. A computer will then produce pictures of the heart based on the detected gamma rays.

How should I prepare for the exam?

- Please arrive on time. If you are more than 15 minutes late, your exam may need to be rescheduled. Plan to be in the Nuclear Medicine Department for about 3 hours.
- Do not eat or drink for 6 hours prior to your study; water is okay.
- Eat or drink only caffeine-free products for 24 hours before your exam. Do not drink *decaf* products, coffee, tea (even herbal), cocoa, any kind of soft drink, or eat chocolate.
- Do not smoke cigarettes or cigars, or chew tobacco, for at least 4 hours before your exam.

- Ask your doctor if you should stop taking any medications before the exam. Taking certain medications the day of the test can alter the results.
- Wear comfortable walking shoes and loose-fitting clothes. Do not apply any creams, lotion, or powder to your chest area on the day of your exam.
- Tell the technologist if you are planning to travel out of the country within 2 weeks after your exam.
- Please tell your doctor or contact the Nuclear Medicine Department if you:
 - Cannot lie flat on your back with your both your arms extended above your head for 20 minutes.
 - Have asthma or a chronic lung disease.
 - Have problems with your knees, hips, or keeping your balance.

These problems may limit your ability to perform the exercise needed for this exam.

How is the exam performed?

1. First, an intravenous (IV) line will be placed in your arm. A small amount of the tracer will be injected, enabling the technologist to obtain pictures of your heart. There are no adverse or allergic reactions from this tracer. For about 20 minutes, a gamma camera will take pictures of your heart while you are lying on your back with your arms above your head.
2. Once the imaging is done, electrodes will be attached to your chest to watch your heart during the stress test. For the stress part of the exam, you will walk on a treadmill for a few minutes. The ECG (electrocardiogram) electrodes will monitor the electrical activity of your heart while you walk, and your blood pressure will be measured often. Before you stop walking, you will get a second dose of the tracer. It is given when the blood flow to the heart is at its peak, providing the best chance to detect regions of the heart that are not receiving enough blood flow.
3. One minute later, you will stop walking. The tracer will have collected in your heart about 30 minutes later, as you lie on the exam table. The gamma camera will then be used to obtain pictures. It will move slowly in an arc over the front of your chest for about 20 minutes. Be sure to lie very still during this part of the exam.

Questions?

Call 206-598-6200

Your questions are important. Call your doctor or health care provider if you have questions or concerns. UWMC Clinic staff are also available to help at any time.

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4. The pictures taken after exercise must be compared with pictures of your heart taken after injection of the same tracer while you are resting. The comparison is done to conclude whether or not blood flow to your heart has changed once you have rested, and to check for heart disease.
5. If you can't use a treadmill, you will not exercise, but instead be given a drug that will cause your heart to work just as hard. You will then be given the tracer.
6. Right after the exam, a doctor with special training in nuclear medicine will check the quality of the images.
7. The entire exam takes about 3 hours, or it could be a 2-day exam.

What will I feel during the exam?

- You may notice some minor discomfort from the IV injection of the tracer.
- You will be asked to walk until you are either too tired to keep going, or short of breath, or if you have chest pain, leg pain, or other discomfort that makes you want to stop.
- If you are given a medication to increase blood flow instead of exercising, you may briefly feel anxious, dizzy, queasy, shaky, or short of breath. If the side effects of the drug are severe or make you too uncomfortable, other drugs can be given to stop the effects. A reaction of this type is rare.
- Most patients can resume normal activities right away after the exam. The radioactivity in your body will decrease over time. Radioactivity will also decrease as the tracer passes out of the body in the urine or stool.

Who interprets the results and how do I get them?

A doctor with special training in nuclear medicine will review the pictures, and will send a report of the results to your referring doctor. Your doctor will then share the results with you.

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