

Cardiac Nuclear Medicine Exam

How to prepare

A cardiac nuclear medicine exam studies the structure and function of your heart. This handout explains how to prepare for the exam, how it works, 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 take pictures of the human body.

Cardiac refers to the heart. A cardiac nuclear medicine exam checks the structure of the heart and shows how well the heart is working.

How does the exam work?

We can best study blood vessels of the heart by watching how exercise or medicine changes the blood flow through them.

For this exam, you will have a *resting study* and then a *stress test*. Usually, the stress test is physical exercise that makes your heart work harder than normal. If you cannot exercise, we will give you a drug that increases your heart rate or open ups (*dilates*) the heart arteries.

You will receive a *tracer* (a radioactive substance) when your heart is at rest and again when it is stressed. The tracer will be given directly into your vein through an *intravenous* (IV) line.

The tracer will collect in your heart and give off *gamma rays*. A special *gamma camera* detects the rays and produces images that show the blood flow to your heart.



During this scan, you will need to lie still in the gamma camera for 20 minutes while it takes pictures of your heart.

How do I prepare?

- Make sure that your appointment time works well for you. **Plan to arrive on time.**
- Some medicines can affect your test results. Ask your care provider if you should stop taking any medicines before your exam. Here are some medicines you may need to stop taking on the day of your exam:
 - **Nitrates:** sublingual Imdur, Isomo, Isordil, Isosorbide, Nitrobid, NTG, and NTG patch
 - **Beta blockers:** Atenolol, Carvedilol, Labetalol, Metoprolol, Nadalol, and Propanolol
 - **Medicines with caffeine,** such as Midol and Excedrin
- Call the Nuclear Medicine Department at 206.598.4240 if you:
 - Have had trouble placing an IV line in your arm in the past.
 - Cannot lie flat on your back with your arms extended above your head for 20 minutes.
 - Have asthma or a chronic lung disease.
 - Have problems with your knees or hips, or keeping your balance.

Before Your Exam

If You Weigh More Than 100 Pounds

For **12 hours** before your exam:

- Do **not** eat or drink anything that contains caffeine. This includes coffee, tea chocolate, and medicines such as Midol and Excedrine.
- Do **not** drink decaf products, coffee, tea (even herbal), cocoa, or any kind of soft drink.

If You Weigh Less Than 100 Pounds

For **24 hours** before your exam:

- Do **not** eat or drink anything that contains caffeine. This includes coffee, tea chocolate, and medicines such as Midol and Excedrine.
- Do **not** drink decaf products, coffee, tea (even herbal tea), cocoa, or any kind of soft drink.

For All Patients

- **For 6 hours** before your exam, do **not** eat or drink anything but water.

- For **at least 4 hours** before your exam:
 - Do **not** smoke cigarettes, marijuana, or cigars. Do **not** chew tobacco.
 - Do **not** use electronic cigarettes, vaping products, or any form of nicotine.
 - Do **not** drink alcohol or use any recreational drugs.

Day of Your Exam

- Do **not** apply any creams, lotion, or powder to your chest area.
- Wear comfortable walking shoes and loose-fitting clothes.
- Please arrive on time. If you are more than 15 minutes late, we may need to reschedule your exam.
- Plan to be in the Nuclear Medicine Department for about 3 hours.

How is the exam done?

- First, an IV line will be placed in your arm. A small amount of the tracer will be injected. It should not make you feel any different.
- You will be asked to lie on your back with your arms above your head. You will need to lie very still for about 20 minutes while the gamma camera takes pictures of your heart.
- After the imaging is done, small patches called *electrodes* will be attached to your chest for the *electrocardiogram* (ECG) stress test. For this part of the exam:
 - You will walk on a treadmill until you are too tired or too short of breath. The electrodes will monitor the electrical activity of your heart while you walk. We will check your blood pressure often. If you cannot use a treadmill, you will not exercise. We will give you a drug to replace the exercise test.
 - When the blood flow to your heart is at its peak, we will give you a second dose of the tracer. The tracer helps your doctor see if there are areas of your heart that are not getting enough blood during exercise.
 - One minute after you get the second dose of the tracer, you will stop walking. We will ask you to lie on the exam table again for more pictures to be taken.
 - The camera will move slowly in an arc over your chest for about 20 minutes. You **must** lie very still during this part of the exam.

- We will compare the pictures taken after you exercised with the pictures taken while you were resting. We will see if there are any changes in blood flow to your heart muscle when you are under stress.
- Right after the exam, a doctor with special training in nuclear medicine will check the quality of the images. We may take more pictures, if needed.
- The entire exam takes about 3 hours. It may be done over 2 days.

What will I feel during the exam?

- You may feel some discomfort when the IV is placed.
- We will ask you to walk on the treadmill until you are too tired or too short of breath to keep going, or if you have chest pain, leg pain, or other discomfort that makes you want to stop.
- If you receive a medicine instead of exercising, you may:
 - Feel queasy or short of breath for a short time
 - Have a headache
 - Have a feeling of fullness in your stomach or chest

If the side effects of the drug are severe or make you too uncomfortable, we can give you other drugs to stop the effects. This kind of severe reaction is rare.

What happens after the exam?

- Most patients can resume normal activities right after the exam.
- The radioactivity in your body will get less over time. Radioactivity will go away as the tracer leaves your body in your urine and stool.

Who interprets the results and how do I get them?

A doctor with special training in nuclear medicine will review your pictures. Within 1 business day, this doctor will send a report of your results to the provider who referred you for the exam. Your own provider will talk with you about the results.

You may also read your results on your eCare Results page. If you need copies of your images on disc, call 206.598.6206.

You and your provider will then decide the next step, such as treatment for a problem, as needed.

Questions?

Your questions are important. Call your doctor or healthcare provider if you have questions or concerns.

- UWMC Imaging Services:
206.598.6200
- Harborview Imaging
Services: 206.744.3105