UW Medicine

Cardiac Nuclear Medicine Exam

How to prepare

A cardiac nuclear medicine exam is used to study the structure and function of your heart. Read this handout to learn how to prepare for the exam, how it works, how it is done, 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?

Blood vessels of the heart are best studied by watching how exercise changes the way blood flows through these vessels. For this exam, you will have a resting study and then a *stress test*. Usually, the stress test is physical exercise, to make your heart work harder than normal.

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 muscle.

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

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How should I prepare?

- Some medicines can affect your test results. Ask your healthcare 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 that contain caffeine**, such as Midol and Excedrine

- Call the Nuclear Medicine Department at 206.598.4240 if:
  - It is hard to place an IV line in your arm.
  - You cannot lie flat on your back with your arms extended above your head for 20 minutes.
  - You have asthma or a chronic lung disease.
  - You 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), cocoa, or any kind of soft drink.

For All Patients

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

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

Day of Your Exam

- Do **not** apply any creams, lotion, or powder to your chest area on the day of your exam.
- Wear comfortable walking shoes and loose-fitting clothes.
- Make sure that your appointment time works well for you. 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.

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, 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. 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. You will be asked to lie on the exam table again for more pictures to be taken.
  - The camera will move slowly in an arc over the front of your chest for about 20 minutes. You will need to lie very still during this part of the exam.

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- The pictures taken after you exercise are compared with pictures of your heart taken while you were resting. This will show any changes in blood flow to your heart muscle when you are under stress.
- If you cannot use a treadmill, you will not exercise. You will be given a drug that will replace the exercise test. You will then be given the tracer.
- Right after the exam, a doctor with special training in nuclear medicine will check the quality of the images. More pictures may be taken, if needed.
- The entire exam takes about 3 hours. It may also be done over 2 days.

What will I feel during the exam?

- You may feel some discomfort when the IV is placed.
- You will be asked 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 are given a medicine to increase blood flow 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, other drugs can be given to stop the effects. This kind of severe reaction is rare.

What happens after the exam?

- Most patients can resume their 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 your provider who referred you for the exam. Your own provider will talk with you about the results of your scan.

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 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

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