



UW Medicine

核子醫學心臟檢查 如何做準備

核子醫學心臟檢查用來研究心臟的結構和功能。請閱讀本手冊並瞭解針對核子醫學心臟檢查如何做好準備、該檢查的原理、流程、您在檢查中的感覺及如何獲取檢查結果。

什麼是核子醫學心臟檢查？

核子醫學檢查是以放射性化合物來偵測和治療許多疾病。由於它利用放射線為人體造影，因此屬於放射學的一種。

心是指心臟。核子醫學心臟檢查主要檢查心臟的結構和功能。

該檢查的工作原理是什麼？

檢查心血管的最佳方式即是觀察血管中因運動而產生的血流變化。為進行此項檢查，您首先需接受一項休息態檢查，然後接受壓力測試。壓力測試通常是身體活動，旨在讓您的心臟比平常更賣力工作。

當您的心臟處於休息態時，您需注射一種追蹤劑（一種放射性物質）。追蹤劑是透過一條靜脈輸液 (IV) 導管直接輸入到靜脈中。

追蹤劑會聚集在心臟中並放射出伽馬射線。然後用一部特製的伽馬射線照相機探測伽馬射線並產生出可現實血液流進心肌的圖像。



在此項掃描期間，您將需要躺著不動 20 分鐘，讓伽馬射線照相機拍攝您心臟的圖像。

我應該做哪些準備？

- 諮詢您的醫生您是否應在檢查前停用任何藥物。某些藥物可能會影響檢查結果。
- 如有下列情況，請致電核子醫學科 (206.598.4240):
 - 將靜脈輸液導管置於您的手臂內是困難的。
 - 您不能平躺著，將雙臂伸高到頭部上方 20 分鐘。
 - 患有哮喘或慢性肺病。
 - 您的膝蓋或臀部有問題，或者您不能保持您的平衡。

在檢查前

如果您的體重超過 100 磅

- 在檢查前 **12 個小時**:
 - 切勿吃喝含有咖啡因的任何東西。這包括咖啡和巧克力。
 - 切勿飲用去咖啡因的產品、咖啡、茶（包括花草茶）、可樂或任何一種軟飲料。

如果您的體重不到 100 磅

- 在檢查前 **24 個小時**:
 - 切勿吃喝含有咖啡因的任何東西。這包括咖啡和巧克力。
 - 切勿飲用去咖啡因的產品、咖啡、茶（包括花草茶）、可樂或任何一種軟飲料。

對於所有病人

- 在檢查前 **6 個小時**:
 - 切勿吃喝任何東西，除了水。
- 在檢查前至少 **4 個小時**:
 - 切勿吸煙或吸雪茄。
 - 切勿嘴嚼煙草。

檢查當天

- 檢查當天，切勿在胸部塗抹任何乳霜、乳液或爽身粉。
- 穿著舒適的便鞋和寬鬆衣物。

- 確保你的約診時間適合你。請準時赴約。如果您遲到超過 15 分鐘，則可能需要重新安排檢查時間。
- 請準備在核子醫學科停留約 4 小時。

檢查的流程是什麼？

- 首先，在您的手臂上插一根靜脈注射針管。接著注射少量的追蹤劑。追蹤劑不會對您造成任何影響。
- 此時會要求您平躺，並將雙臂抬高超過頭部。您需要靜躺約 20 分鐘，在此期間伽馬照相機對您的心臟進行拍照。
- 造影完成後，醫生將一些稱為電極的小貼片附於您的胸部進行心電圖 (ECG) 負荷測試。對於這部分檢查：
 - 您需要在步行機上行走，直到您走得太累或呼吸太急促為止。
 - 電極會監測您行走時的心電活動，並時常測量您的血壓。
 - 在您停下來之前，我們會為您注射第二劑追蹤劑。這是在流進心臟的血液處於最高峰時注射的。追蹤劑幫助醫生看到您的心臟在運動時是否有些地方得不到足夠的血液。
 - 在注射第二劑追蹤劑後的一分鐘，您可停下來。您需要再次躺在檢查床上，以便拍攝更多影像。
 - 照相機會在您的胸前以弧形曲線緩慢移動，此過程將持續約 20 分鐘。在進行此步檢查時，您需要平躺且不要移動。
- 運動後拍攝的影像必須與您先前休息時所拍攝的心臟影像互相對照。這將顯示出您在壓力下血液流進心肌的任何變化。
- 如果您無法在跑步機上行走，則您無需運動。我們會讓您服用一種藥物來代替運動測試。然後，我們會為您注射追蹤劑。
- 檢查結束後，一名核子醫學專科醫師會立即檢查這些影像的品質。如有需要，可能會拍攝更多影像。
- 整個檢查需時約 4 小時。也有可能要 2 天完成。

我在檢查過程中會有什麼樣的感覺？

- 當放置靜脈輸液導管時，您可能會感到有些不舒服。
- 我們會要求您在跑步機上不停地行走，直至您感覺疲勞或呼吸短促，或是感到胸痛、腿痛或出現其他令您想要停下的不適狀況為止。
- 如果醫生給您吃藥而不是運動來增加您的血流，您可能會：
 - 在一段短的時間內感到惡心或呼吸短促。
 - 頭痛
 - 感到胃部或胸部脹滿

如果藥物的副作用過於嚴重，或使您感覺非常難受，則我們會用其他藥物來解除這些副作用。這種嚴重反應是很罕見的。

檢查後會發生什麼？

- 大多數病人在檢查後可以立即恢復他們的正常活動。
- 您體內的輻射量會隨著時間的推移而減弱。隨著追蹤劑隨您的尿液和糞便排出您的身體，輻射線便會消失。

誰為我解釋檢查報告的含義，我將怎樣獲取我的檢查結果？

一名核子醫學專科醫師會檢查這些影像。在 1 個工作日內，這位醫生會將一份您的檢查結果的報告發給轉介您做此項核子醫學心臟檢查的保健服務提供者。然後，您保健服務提供者將您的檢查結果告訴您。

有問題嗎？

你的問題是很重要的。
如果你有任何問題或疑慮，
請致電你的醫生或保健服務
提供者。

UWMC 造影服務線：
206.598.6200

Harborview 造影服務線：
206.744.3105

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 and function of the heart.

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.

How should I prepare?

- Ask your doctor if you should stop taking any medicines before your exam. Some medicines can affect test results.
- 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 and chocolate.
 - 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 and chocolate.
 - 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.
- **For at least 4 hours** before your exam:
 - Do **not** smoke cigarettes or cigars.
 - 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 4 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.
- 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 4 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 healthcare provider who referred you for the cardiac nuclear medicine exam. Your provider will then share your exam results with you.

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