

What is a Myocardial Perfusion scan?

A Nuclear Medicine Myocardial Perfusion scan assesses the blood supply of the coronary arteries in the heart and provides your doctor with information on how your heart is working.

There are 2 parts to the examination, a stress test and scan, and a rest scan. They can be done on the same day, usually 3-4 hours apart. It makes no difference to the results which part is done first.



- A 'stress' test involves walking on a treadmill or riding an exercise bike. If this is not possible, a medication can be used to increase the blood flow to your heart. You will be given an injection of a radioactive nuclear medicine tracer during the stress test and then a 'stress' scan will be performed.
- A 'rest' scan requires you to be well rested with no stress on the heart. You will be given an injection of a radioactive nuclear medicine tracer and then the rest scan will be performed soon after.

The tracer travels in your blood stream to the heart muscle where it is absorbed. The scan shows the blood flow pattern in the heart muscle. A specialist doctor called a Nuclear Medicine Physician compares the stress scan and rest scan to identify areas of the heart where the blood flow pattern is changed or unusual because of 'stress'.

How long will the procedure take?



The myocardial perfusion scan takes up to 5 hours to complete the 2 parts. The stress test and scan can take up to 60 minutes. The rest part of the examination can take up to 60 minutes.

There will be a break between the 2 parts. Our staff will advise you of the time to return for the second part and provide instructions for eating, drinking, and medications.

Is there any special preparation required?

When booking your appointment, it is essential that you inform our staff if you are pregnant or breastfeeding. Please have a list of your prescribed medications ready when making the appointment. This also includes those medications that you buy over the counter at a pharmacy, or herbal remedies and supplements.

The amount of radioactive tracer used for each part is based on weight and height or Body Mass Index (BMI). To reduce the overall radiation exposure and provide best possible image quality, some patients will be asked to do the test over 2 days. Please tell our staff your approximate weight at the time of booking.

You may need to stop taking certain medications for a few days. **It is very important that you do not stop any medications or change the dose without consulting with our medical imaging clinical staff and your own doctor.** They will give you specific instructions about when to stop and restart the medication. Aspirin is usually not stopped. You should continue with pain medication and other medications as usual.

You may have a light breakfast but are asked not to smoke for 4 hours before this scan. You need to avoid all caffeine products including tea, coffee, herbal tea, decaffeinated coffee, cola, energy drinks, chocolate (drinking or solid) for 24 hours before the scan. Instructions will be provided for you at the time of your booking.

What do I need to do on the day of the procedure?

As you will be exercising, we recommend you wear comfortable clothes and walking shoes. A shirt or blouse with a front opening is also helpful as an echocardiogram (ECG) is performed during the stress test.

On the day of your appointment, please ensure you bring:

- Your referral form (if you have it)
- All previous relevant scans or x-rays
- Medicare and healthcare cards

- List of all medications

What happens during the procedure?

The nuclear medicine technologist looking after you will explain the procedure, check all your preparation is correct and notify you which part will be done first, Rest or Stress. The order of the test is decided by the specialist in charge at each site. The first part of the test is usually performed in the morning and the second part 3-4 hours later in the afternoon.

Before the examination begins a thin plastic tube called an intravenous (IV) cannula is inserted into a vein in your arm.

For the Rest scan, a dose of the radiotracer will be injected using the IV cannula. You will be asked to rest in the waiting room for approximately 30 minutes. You may be given a cold drink such as water or milk. This helps make the images of your heart clearer. The images will be taken using a nuclear medicine camera, this takes 15-30 minutes.

The Stress test is done to assess the function of the heart using exercise on a treadmill or bike but can also be done using some special medicine to increase blood flow to the heart. During any stress test your heart function is monitored using an ECG and Blood Pressure machine.

If you can exercise, you will need to do so for long enough to reach a target heart rate. The radiotracer is injected using the IV once the target has been reached and you will continue to exercise for 2 minutes after the injection. You will continue to be monitored after the exercise has stopped until the heart rate slows down.

If you cannot exercise, a suitable medication will be used to increase blood flow to your heart while you are laying on a bed (similar to exercising). This is called a pharmacological stress test. The injection of radiotracer will be given during the pharmacological stress test. You will be monitored for a few minutes afterwards or until any side effects from the medicine have worn off.

After the stress part of the exam you will be asked to rest in the waiting room for approximately 30 minutes. During this time, you may be given a drink of water or milk. This helps make the images of your heart clearer. After the period of rest, you will be asked to lie on a bed for 15-30 minutes while the nuclear medicine camera rotates around your heart. The ECG will again be used to monitor your heart.

There is approximately 3-4 hours break between the two parts. The nuclear medicine technologist will give instructions of what is permissible during this time.

- If the stress test was completed first, you will be able to have caffeine and take any medications that you stopped but you must not do any strenuous exercise before the resting test.
- If the rest was done first, you must not take any of your medications or have caffeine until the stress test is finished.

The IV cannula will be removed once both parts are complete and before you go home.

Are there any after effects from the treatment?

Some patients report after the exercise for the 'stress' test, that they feel tired. However, the radioactive tracer does not cause any side effects. You can drive yourself home after your myocardial perfusion scan is finished.

The risk of having an adverse reaction to the nuclear medicine tracer is rare (1 in 10,000). The likelihood of a serious allergic reaction is very rare. The adverse effects of the pharmacological stress agents will be discussed with you on the day.

What happens after the procedure?

Our staff will provide you with clear written instructions on ways to look after yourself following a myocardial perfusion scan, including things like re-starting any medication stopped and arranging a follow up appointment with your referring doctor.

After your scan small amounts of radioactivity are released from your body and you should avoid close prolonged contact with pregnant women or young children for 4 hours after the scan.

If you are breastfeeding, you will need to stop breastfeeding for 4 hours after the scan.

What are the benefits?

The myocardial perfusion scan is simple, low-risk examination that assesses the blood supply to the heart and provides your doctor with information on how your heart is working. The results of the test help your doctor to assess the risks that you will experience a significant cardiac event such as a heart attack as well as other important information.

Are there any risks?

In referring you for this scan, your doctor is of the opinion that the benefits of this procedure for you are greater than the risks.

The main risks of the examination relate to the stress test component. These risks are minimised by closely monitoring your heart rate, electrical activity of your heart (ECG) and your blood pressure. If serious complications occur, you may require an admission to hospital.

Nuclear medicine scans use ionising radiation to produce the images. The radiation dose associated with this examination is very low and the associated radiation risks, such as an increased lifetime risk of developing cancer caused by the exposure to radiation, are small. The risks of the radiation exposure from this scan needs to be compared to the risks of a serious heart condition not being treated.

Prior to the scan our specialist doctor will discuss the procedure with you in detail including any risks specific to you. You will be provided with the opportunity to ask questions. It may be necessary to do a formal consultation to make sure that the procedure is the most appropriate for you.

When do I get the results?

Following the examination, a comprehensive report outlining the scan will be sent to your referring doctor and regular GP. Please ensure that you make a follow-up appointment with your referring doctor within one week of your scan to discuss the results so they can explain what the results mean for you.

I still have questions; who can I ask?

Medical information can be complex, and you may receive information that you do not fully understand. It is important for you to consider the risks and outcomes of the procedure as well as your personal needs before making a decision to undergo the procedure.

If you have read this online information and are still unsure if this is the correct procedure for you; before making a booking, you should discuss your questions or concerns with your referring doctor in the first instance. Your regular GP and/or your family may also be a useful resource. Your referring doctor can answer questions about the risks and benefits of not having the procedure and other options for treatment.

If you have questions before your appointment about what is involved on the day, our staff would be happy to assist. Please contact the imaging centre where you have made your appointment.