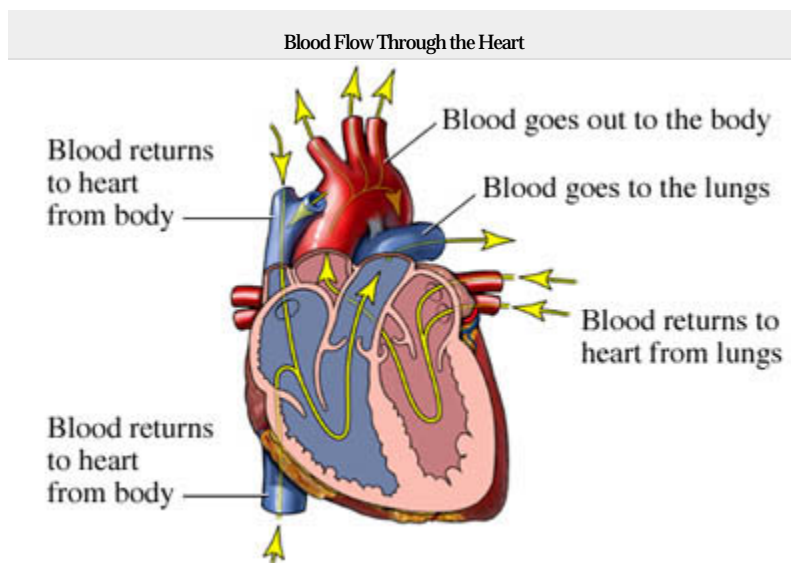


Myocardial Perfusion Imaging

(Nuclear Stress Test)

Definition

Myocardial perfusion imaging is a test that uses a low dose of a radioactive agent to evaluate the blood flow and function of the heart. Since blood flow to the heart is best tested when you increase the work of the heart, this test is usually done with exercise. If you cannot exercise, your doctor may use a drug that increases the work of your heart to mimic exercise.



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Reasons for Test

Myocardial perfusion imaging is used to look for previous damage to your heart and your risk of future heart damage.

Some specific reasons to do the test include:

- Determine if you are at risk for a heart attack
- See if you need coronary angiography, angioplasty, or heart surgery
- See which areas of the heart muscle have poor blood supply
- Provide information about the heart's pumping ability
- See the amount of scarring that occurred from a heart attack
- Check the success of angioplasty or coronary bypass surgery

Possible Complications [TOP](#)

Complications can include:

- Chest pain
- Irregular heart rhythm
- Heart attack (rare)
- Radiation exposure

During the test, technologists and nurse practitioners will be alert for any signs of heart or lung problems. They will be ready to take action if complications develop. Your doctor will be available during the test, as well.

What to Expect [TOP](#)

Prior to Test

Before the test is scheduled, let your doctor know if you have any medical conditions that may limit your ability to exercise. If you cannot exercise, your doctor may order a drug to mimic exercise. Let your doctor know if you have any of the following:

- Asthma or chronic lung disease
- Arthritis problems, especially with your hips or knees

For 24 hours before the test, do not eat or drink any foods or take any of the medicines listed below:

- Beverages containing caffeine (eg, coffee, tea, colas, or other soft drinks)
- Foods containing caffeine, such as chocolate (including candies, frosting, pies, cakes, cookies, cocoa, or chocolate milk)
- Over-the-counter pain relievers that contain caffeine, including Anacin and Excedrin
- Products that contain theophylline, such as Constant-T, Primatene, Quibron, Slo-Phylline, or Theo-Dur
- Dipyridamole (Persantine)

Read product labels and ask your doctor or pharmacist for more information about products you should avoid before the test.

You will be asked to avoid eating or drinking for 4-8 hours before the test.

Wear loose clothing and low-heeled shoes with rubber soles or tennis shoes.

If you smoke, you should avoid smoking for 1-2 days before the test, or at a minimum, for at least four hours before the test.

Tell your doctor if you:

- Have a history of allergies
- Are taking any medicines or herbal supplements
- Have diabetes
- Are pregnant or might be pregnant
- Are breastfeeding
- Have any prosthetic implants in your body

Description of Test

The test usually consists of two parts. One part of the test looks at the heart at rest.

The other part of the test, called “stress,” examines the heart after exercise, or after taking a drug that mimics the effect of exercise on the heart. The doctor interpreting the test will compare the exercise

and resting images to evaluate the health of your heart. The order of the parts of the test will vary based on the protocol in your hospital. You will be informed if the exercise or the rest portion will be done first.

A blood pressure cuff is placed on one arm. An intravenous line (IV) is inserted into a vein on your other arm. Small, round pads (ECG electrodes) are placed on your chest and attached to an electrocardiograph. This allows the doctor to monitor your heart rhythm. Your blood pressure and heart rate are monitored before, during, and after you have exercised.

The technologist will inject a small amount of radioactive material via the IV into your bloodstream. The amount of radioactivity in these materials is very small. The radioactive tracers concentrate in the parts of the heart that have the best blood flow, and emit signals that can be detected by a special camera. Images taken by the camera show any parts of the heart that are not getting enough blood. These images are taken while you are at rest and while you exercise.

The exercise or “stress” part of the test is usually done with a treadmill. You begin by slowly walking on the treadmill, and the pace increases gradually every three minutes. As you exercise, your heart rate and blood pressure will change. At your peak exercise, the tracer is injected into the IV and you will continue exercising for another minute.

15-30 minutes after exercising, you will lie down on a special table as images are taken of your heart.

If you are unable to exercise for any reason, the doctor may use a drug that mimics the effect of exercise on the heart. If you notice any changes in the way you feel, or experience any side effects, notify the doctor who is monitoring the test.

If you have coronary artery disease, you may feel chest pain or angina during the stress portion of the test. A specialist will be nearby and may give you medicine for the symptoms or stop the test early. Let the clinician know if you have any symptoms of jaw, neck, arm, or chest pain.

After Test

You will be able to leave after the test is done.

How Long Will It Take?

The entire test takes 2 1/2 hours. You may receive the entire test in one day, or you may have each part of the test on separate days.

Will It Hurt?

In general, this test should not be painful. If you were given a dilating medicine, you may feel some discomfort such as flushing, chest pressure/pain, or shortness of breath.

Results

The doctor will compare the images taken of your heart during rest with the images of your heart during stress. If your heart is relatively healthy, there should be little or no difference between the images taken during stress and those taken at rest. If your heart has partially blocked arteries, images taken during stress will be different from those taken at rest.

After the test, call your doctor if any of the following occurs:

- Your symptoms continue or worsen
- You develop any new symptoms
- You continue to experience side effects from the medicines used

In case of an emergency, call for medical help right away.

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