MYOCARDIAL PERFUSION SCAN

WHAT IS A MYOCARDIAL PERFUSION SCAN?

A Myocardial Perfusion Scan (also called a nuclear stress test) allows your cardiologist to see how your heart muscle works both when you are at rest and when your heart is “stressed.” Your heart can be stressed with exercise or with drugs that increase the heart rate or change the way blood flows through the coronary arteries to mimic the same conditions as exercise.

A nuclear imaging agent is injected into your blood stream and absorbed by your heart. A camera then takes pictures of your heart. If there are areas in your heart where there is low or no blood flow, the nuclear imaging agent will not show up as brightly, or at all. This indicates areas of possible heart muscle or coronary artery problems.

WHEN IS A MYOCARDIAL PERFUSION SCAN ORDERED?

Your doctor order a nuclear test to help determine if you have coronary artery disease (CAD) that is causing decreased blood flow to the muscle cells of your heart. A nuclear stress test may be ordered if you have had other testing, such as a treadmill test, which showed an abnormality or to follow your progress after a heart attack, bypass surgery or stent placement.

WHAT HAPPENS DURING THE NUCLEAR STRESS TEST?

To prepare for the test an IV needle will be placed in your arm. Your ECG and blood pressure will also be monitored during the test. There are two parts to the test; the rest portion and the stress portion.

During the rest portion, you will have an injection of a nuclear isotope. You will wait 30-45 minutes for the isotope to be absorbed, and then you will lie under the camera while the pictures are taken.

During the stress portion, you may be asked to walk on a treadmill or your doctor may choose to use drugs, such as adenosine, lexiscan or dobutamine, to mimic the state of exercise for your heart. Reasons for using drugs rather than exercise include:

- You have a physical problem that prevents you from walking on a treadmill
- You have been taking medicine that won’t allow your heart rate to increase enough for an exercise test to be useful

Once your target heart rate is achieved, you will be given an injection of a nuclear isotope. You will wait 30-45 minutes for the isotope to be absorbed by the heart and then you will lie under a camera for 12-15 minutes while the pictures are taken.

HOW DO I PREPARE FOR A NUCLEAR STRESS TEST?

- Wear comfortable clothing suitable for exercise. Both men and women should wear two-piece clothing with comfortable walking or running shoes. Avoid tight constrictive clothing and heavy jewelry. Do not use powders or lotions on your chest as this can cause problems with the
electrodes that will be placed on you for the test. Avoid wearing clothing with excess metal, such as snaps or clips.

- Check with your doctor about taking your regular medications, especially heart and blood pressure medications. In some situations, your doctor may want you to stop taking certain medications prior to your test.
- Bring your medications that you are currently taking, or a list of the names and dosages of your medications.
- No caffeine or caffeine products (coffee, decaffeinated coffee, tea, chocolate) 12-24 hours prior to your test.
- Do not take any over the counter medications containing caffeine (i.e. Excedrin).
- Nothing to eat after midnight prior to the exam. If your test is scheduled for the afternoon, you can have a light breakfast the morning of the exam (i.e. a bowl of cereal or toast), then nothing to eat after 7:00 AM.
- Tell your doctor or a member of the testing team if you have a history of breathing problems, such as asthma or emphysema.
- Allow 3-4 hours for the test.

WHAT HAPPENS AFTER THE TEST?

After the test you can go home and resume your usual activities, unless instructed otherwise. The test will be reviewed and interpreted by a cardiologist who specializes in nuclear medicine. Typically your doctor's office will call you with the results of your test. Sometimes your doctor will want to see you for an appointment to discuss your test results and the associated testing and treatment options.

WHAT ARE THE BENEFITS OF A NUCLEAR STRESS TEST?

A nuclear test can help your doctor to determine if you have coronary artery disease (CAD) and can provide information about the condition of your heart muscle. Your doctor will use the information to decide your need for treatment or for more costly or riskier tests.

WHAT ARE THE RISKS OF A NUCLEAR STRESS TEST?

A nuclear test is relatively safe, with very few patients ever experiencing problems. On rare occasions, patients may experience problems with their heart rate or rhythm and even more rarely, cardiac arrest. The test team is aware of these risks and is prepared to handle any emergencies.

Some patients experience transient side effects from adenosine and dobutamine. Your doctor can treat you for any of these side effects, should you experience them during your nuclear test.