Nuclear Stress Test (Treadmill or Adenosine)

What is a Nuclear Stress Test?
A nuclear stress test is a noninvasive means of detecting the presence and/or significance of coronary artery disease. Coronary artery disease is a condition in which there is narrowing or blockage of the blood vessels supplying the heart muscle. This can cause chest pain which is known as angina pectoris.

Why is a nuclear stress test useful?
The most direct means of detecting the narrowing or blockage of a coronary artery is with coronary angiography. Since this is an invasive and expensive procedure, it is not practical to perform coronary angiography in every patient who is suspected of having coronary artery disease. On the other hand, a nuclear stress test is noninvasive and less expensive; therefore it is more suitable for this purpose.

How is a nuclear stress test performed?
The nuclear stress test is an assessment of blood flow to the heart. This assessment is done in two parts, at rest and during stress.

The first step will involve the insertion of an IV for the administration of the sestamibi (Cardiolite) and the Adenosine if you are having a chemical stress test.

Rest component of the test: A radioactive compound that localizes in the heart is injected in a vein of your arm, followed by a scan of your heart approximately one hour after the injection, performed with the help of a gamma camera that detects the presence of the injected compound in your heart.

Stress component of the test: This component involves either treadmill exercise, or if you are unable to perform on the treadmill, the administration of a chemical (Adenosine) to artificially stimulate exercise will be given. Before you start the treadmill exercise or receive the Adenosine, several small electrodes (small pads) will be placed on your chest. These electrodes are then connected to an electrocardiograph (ECG) which monitors the rhythm of your heart. A second injection of the radioactive compound is given during exercise on the treadmill or while receiving the Adenosine, and a second scan of your heart is performed approximately one hour later.

How long does it take to perform a nuclear stress test?
After each injection, approximately 60 minutes time is allowed for the injection to distribute in the heart and to be cleared away from adjacent organs. Each scan takes approximately 30 minutes. You should expect to be here around four to five hours total.

What are the side effects?
The side effects can be divided in two parts: those due to injection of the radioactive compound and those due to the treadmill stress test or if you are having a chemical stress test, those due to the Adenosine.

Side effects of the injection of the radioactive compound:
- Some patients experience transient metallic or bitter taste immediately after the injection of Technecium 99m sestamibi (Cardiolite).
- Occasionally, headache and non-itching rash occur.
- Rarely, seizures, temporary joint pains, shortness of breath, slower heart rate and vomiting occur.
Side effects of the treadmill test:
- Chest pain, irregular heart rate and rarely death have been reported. If you have any questions regarding this subject, please do not hesitate to ask questions to your physician or to the physician supervising your stress test.

Side effects of the Adenosine:
- You will be lying down during the administration of the Adenosine, which takes four minutes, and may feel some side effects such as nausea, dizziness, shortness of breath and/or chest pressure.

If you are pregnant, suspect you may be, or are a nursing mother; please discuss this with your physician before scheduling the test. You should not breast feed for three days after the test.

What type of preparation is required for a nuclear stress test?
- You should not have food or drink after midnight the night before the test. Especially no caffeine after midnight, which includes coffee (regular and decaf), chocolate products, tea, cola, etc.
- Certain medications may have to be stopped temporarily before the test to ensure the accuracy and effectiveness of the test. Do not take heart medications the day before or the morning of the scheduled stress test time. No theophylline medications 72 hours before the test, which includes Aerolite, Constant-T, Elixophylline, Primatene tablets, Quibron, Slo-bid, TPHYL, Tedral SA, Theo-24 and Theox. If you have any questions about your medications, please check with your doctor.
- Diabetic patients may have orange juice and/or light snack to maintain safe blood sugar level.
- No smoking or nicotine containing products for at least 24 hours before and during the test.
- If you will be exercising on a treadmill, it will help to wear comfortable clothing and footwear. If necessary, a hospital gown will be provided.

What should you bring with you for a nuclear stress test?
- The physician’s order
- A list of your current medications
- A book, magazine, etc., to occupy yourself during waiting periods

When will I receive the results?
A radiologist, who is also board-certified in Nuclear Medicine, will interpret the study and send a report to your doctor. The results of the test are generally sent to your doctor within a day or two. Your doctor gives you the results because he/she is familiar with your history, medications, and other exams you may have had performed. However you normally get results from your doctor (a phone call, by mail, or with a follow-up appointment) will be how you get these results.

If you are unable to keep your scheduled appointment please call Radiology @333-2930 the day before your scheduled time and re-schedule the appointment by calling Centralized Scheduling @ 333-2743.