A stress test, sometimes called a treadmill test, helps the healthcare provider assess how well the heart works during physical activity. As the body works harder during the test, it requires more oxygen and energy. In order to meet that demand, the heart must beat faster and harder. A nuclear stress test combines the traditional treadmill test and monitoring with an imaging series that can look at and measure the blood flow to the heart. The ultimate goal of the test is to see if the heart receives enough blood from its own arteries when it is required to work harder. If a patient cannot exercise, medication is given to stress the heart (called a pharmacological stress test). These tests take 3 to 4 hours.

Stress tests are most commonly ordered to see if:

- Symptoms (such as chest or arm pain, palpitations, shortness of breath, dizziness, excessive tiredness or swelling of feet and ankles) are due to a heart condition
- A person without symptoms has silent heart disease (e.g., blockages or hardening of the arteries)
- There is risk of future heart problems in patients with known heart disease
- The test can recreate an unusual feeling or a heart rhythm

**What to expect**

Before the exam:

Patients may not eat, drink or smoke for three hours before the appointment. In addition, they may not eat or drink any caffeinated foods or beverages or take caffeine-containing medications for 24 hours before the test. Caffeine can be found in coffee, tea, chocolate and certain cold and migraine preparations. Decaffeinated products also contain a small amount of caffeine and may not be consumed. Diabetic patients may take their medication only if they will be eating immediately afterwards. Patients are requested to wear comfortable clothes and rubber-soled shoes or sneakers.

Before a nuclear treadmill stress test:

- Absolutely no foods, drinks or medications containing caffeine may be taken for 24 hours
- No beta-blockers may be taken for 48 hours (consult with your physician)
- No calcium channel blockers may be taken for 24 hours (consult with your physician)

Before a pharmacological (medication) stress test:

- Absolutely no foods, drinks or drugs containing caffeine may be taken for 24 hours
- Patients may take all heart and blood pressure medications

(Continued on reverse)
During the exam:
The nuclear test allows the doctor to see pictures of the heart when it is at rest and following stress. Two injections of a small amount of radioactive material are given to create those pictures. The level of radioactivity used is extremely low and has no side effects. To minimize the number of injections, an intravenous line (IV) is placed in the arm before the first injection (thallium) and is used later for the second injection (Cardiolite). Following the first injection, the patient is placed under a special camera, and pictures of the heart are recorded. The camera, which does not produce any radiation, is placed close to the chest, and pictures are taken for approximately 30 minutes. This portion of the test is called the rest study. Following the study, EKG electrodes are placed on the chest to constantly monitor the heart during the stress test.

The heart is stressed, either through exercise or with the use of medication. During the test, the patient is constantly monitored by a nurse practitioner or physician. The actual stress portion of the test takes about 10 to 15 minutes, but the preparation takes longer (up to 30 minutes). Before the end of the stress test, a second injection (Cardiolite) is administered. This radiopharmaceutical is taken up by the heart muscle and can be visualized by the camera in the same manner as the rest study. The imaging portion of the stress study takes approximately 45 minutes.

Normal responses during testing include feeling tired, shortness of breath, sweating and discomfort in the chest, arm or jaw. Severe shortness of breath, extreme tiredness, dizziness, lightheadedness, leg cramps or soreness should be reported to the technologist. The supervising practitioner changes or stops the test early if it is unsafe to continue.

After the exam:
When the test is over, patients may eat or drink and return to their normal routine. They may resume all medications.