NUCLEAR STRESS TESTING

OVERVIEW

A nuclear stress test uses a small amount of radioactive material (tracer) and an imaging machine to create pictures showing the blood flow to your heart. The test measures blood flow while you are at rest and during activity to identify areas with poor blood flow or damage in your heart.

A nuclear stress test may be done after a regular exercise stress test to get more information about your heart, or it may be the first stress test used.

The test is done using a positron emission technology (PET) scanner or single photo emission computed tomography (SPECT) scanner. A nuclear stress test may also be called a myocardial perfusion imaging (MPI) study, cardiac PET study or cardiac SPECT study

PREPARING FOR YOUR TEST

Your doctor or nurse will discuss specific instructions for your nuclear stress test. Those will include:

- Wear comfortable clothes and shoes.
- Avoid lotions and body oils on the day of test.
- Don't eat or drink anything except water for two hours before the test.
- Don't drink or eat anything with caffeine for 24 hours before the test.
- Bring an inhaler, if needed.

You may also be asked to stop taking medications, such as beta blockers on the day of your test or 24 hours prior to the test, as these medications tend to keep one's heart rate low. If you have questions about your medications, ask your doctor. Don't discontinue any drug without checking with them first.

You may receive additional instructions if you have diabetes or need a cardiac PET scan.

WHAT TO EXPECT DURING YOUR NUCLEAR STRESS TEST

Before you start the test, a nurse or technician inserts an IV line into your arm and injects the radiotracer (also called a radiopharmaceutical). The radiotracer may feel cold when it's first injected into your arm. It takes a few minutes for your heart cells to absorb the radiotracer. About 20 minutes after the injection, you'll have your first set of images taken while you lie still on a table and your heart is at rest.

After resting images are obtained, a nurse or a technician will gently clean several small areas on your chest and place small, flat, sticky patches called electrodes on them. They'll be attached to an electrocardiogram monitor. This charts your heart's electrical activity during the test.

Before you start exercising, the nurse or technician will perform an EKG to measure your heart rate at rest. They'll also take your blood pressure. You will begin to exercise by walking on a treadmill. The rate of exercise or degree of difficulty will gradually increase. You will be asked to exercise until you feel exhausted.

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If you are unable to exercise, your nurse or technician will inject a medication into your IV line that increases blood flow to your heart. You will experience flushing, shortness of breath and possible headache. Symptoms will resolve within one minute after the injection is completed.

You'll have another injection of radiotracer when your heart rate peaks after exercising or immediately after receiving medication. Then, 30-40 minutes later you'll have the second set of images taken. The radiotracer shows up on the images and highlights any areas of your heart that do not get enough blood flow.

At regular intervals, your care team will ask how you are feeling. Tell them if you feel:

- Chest and/or arm discomfort
- Shortness of Breath
- Dizzy
- Lightheaded
- Any unusual symptoms

Remember, it's normal for your heart rate, blood pressure, breathing rate, and perspiration to increase during the test. A team of medical professionals will be closely monitoring your progress and vital signs. Should they notice any problems, they will ask you to stop exercising.

Your care team will include:

- A **Registered Nurse** to administer medication and monitor vital signs and heart
- A **Nuclear Medicine Technician** who will start the IV, inject the radioisotope and capture images of your heart
- A **Cardiac Technician** will be present at tests taking place at the hospital. They will attach electrodes to your skin and monitor your blood pressure.
- A **Cardiologist** is always on-site and available if needed for any questions or emergencies.

AFTER YOUR TEST

The test takes approximately two and one half hours. After the test, you may return to normal activities unless your doctor tells you otherwise.

The radioactive tracer will naturally leave your body in your urine or stool. Drink plenty of water to help flush the tracer out of your system.

Your doctor will review your results and let you know if treatment or further testing is needed.