Heart Center
OF THE ROCKIES
POUDRE VALLEY HEALTH SYSTEM

Nuclear Cardiac Testing

Nuclear cardiac testing is used to help determine whether or not you have coronary artery disease (CAD) and if you do, to what degree. For patients with known CAD, these tests can also help measure how well treatment is working.

Expertise in Matters of the Heart

Myocardial Perfusion Imaging

Stress myocardial perfusion imaging is an imaging technique that assesses the flow of blood to your heart muscle.

This test will help your doctor know if your heart is receiving enough blood and if you may have coronary artery disease (CAD). If there are blockages, this test will help identify their location and severity.

Patient preparation:
During the 24 hours before your myocardial perfusion imaging test, it is important to totally avoid caffeine. **Please do not eat or drink anything containing caffeine,** including coffee, tea, chocolate, sodas, and some pain relievers, such as Excedrin and Anacin. Don't drink decaffeinated coffee, teas or sodas, either, as they often contain trace amounts of caffeine.

For 4 hours before your test, don't eat or drink anything except water.

Please bring a list of your medications to your appointment. You should also receive instructions from your doctor about whether or not to take your medications before the test. If you don't receive these instructions, please call your doctor.

Wear comfortable clothing and walking shoes if your test will require walking on the treadmill.

What to expect: Our nuclear technologist will start a small IV line into your arm and inject a small amount of a radioisotope or tracer. The tracer is not a medicine or a dye, and you will feel no ill effects from it. The tracer is taken up by the heart muscle in proportion to the blood flow.

Two sets of images will be acquired.

The first set of pictures shows your heart at rest. You will lie on your back with your arms comfortably extended above your head. You will be asked to lie still, breathe normally, and relax to ensure the best possible images. This portion of the test takes 17 minutes.

The second set of pictures is taken after your heart has been stressed. Depending on which test your doctor has ordered, your heart will be stressed either by treadmill exercise or by IV injection of medication (adenosine ordobutamine).

Stress testing is typically very safe. However, as with any medical procedure, complications may occur. Your heart rate and rhythm and vital signs are continuously monitored during the stress portion of the test. Staff is trained to respond appropriately if an emergency occurs.

a) Treadmill stress test: If you are having a treadmill myocardial perfusion imaging test, you will walk on the treadmill until your heart reaches its peak heart rate. This rate is calculated based on your age. At this heart rate, your arteries are completely dilated and more of the radioisotope tracer is injected. You will walk for an additional minute to circulate the tracer and then will be asked to drink some juice or water.

b) Adenosine stress test:
Adenosine is a medication that dilates your blood vessels. It is given through your IV for a total of six minutes. While some patients feel no effects from the adenosine, others feel chest pressure or tightness, chest pain, flushing, lightheadedness, dizziness, nausea and/or shortness of breath. For some patients, walking very slowly on the treadmill helps minimize the unpleasant sensations. Three minutes after the adenosine injection begins, your arteries will be completely dilated and a radioisotope tracer is injected through the IV. Any adverse symptoms will typically resolve quickly after the infusion of adenosine is complete.

During this portion of the test, our EKG technician will closely monitor your blood pressure and oxygen levels.

c) Dobutamine stress test:
Dobutamine is an IV medication that increases the workload of the heart and causes heart arteries to dilate. A nurse practitioner or doctor will be present to monitor the test. Dobutamine will then be injected through an IV in your arm, increasing your heart rate until

(continued on back)

it reaches its target rate. At this point, our nuclear technologist will inject the radioactive tracer and the dobutamine will be stopped. Repeat images of your heart will be done approximately 30 minutes later.

After the stress portion of the test: After your heart has been stressed (treadmill, adenosine or dobutamine), the second set of pictures of your heart will be taken. You will again lie on your back with your arms comfortably extended above your head. Your heart rate will be monitored with an EKG. You will be asked to lie still, breathe normally, and relax to ensure the best possible images. This portion of the test takes 15 minutes.

Please plan on a total of 2 1/2 hours for your myocardial perfusion imaging test.

Locations:

- ☐ Fort Collins – Harmony Campus
  2121 E. Harmony Road, Suite 200
  Fort Collins, CO 80528
  (970) 297-6889, (800) 459-4241
- ☐ Medical Center of the Rockies
  2500 Rocky Mountain Avenue
  Loveland, CO 80538
  (970) 297-6889
  (800) 459-4241
- ☐ Steamboat Springs Office
  940 Central Park Drive, Suite 290
  Steamboat Springs, CO 80487
  (970) 870-1035

You are scheduled for:

- ☐ Myocardial Perfusion Imaging
  - ☐ Treadmill
  - ☐ Adenosine
  - ☐ Dobutamine
- ☐ MUGA Scan

MUGA Scan

MUGA stands for "multi-gated acquisition." A MUGA scan helps doctors see your heart chambers and understand how well your heart muscle is functioning. The test is primarily used to measure your ejection fraction, which is the amount of blood pumped out of your heart during each heartbeat, and to view the motion of the wall of your heart.

Patient preparation: No special preparation is required for this test. You can eat or drink anything you wish. Dress comfortably.

What to expect: You will lie on your back for this exam. Our technologist will start a small IV in your arm and will inject a very small amount of pyrophosphate (PYP). PYP is not a medication; it is a substance that attaches to your red blood cells. Once the PYP has been injected, it is allowed to circulate through your bloodstream for 20 minutes.

You will then receive a second injection, this time of a radioactive tracer. The tracer is not a dye or a medicine. It is an isotope that attaches itself to the PYP. A special imaging camera can then "see" the isotope, the PYP and, most important, your red blood cells as they pool in your heart's left ventricle. Two sets of images will be taken—each image takes 12 minutes to complete.

Please plan on a total of one hour for your MUGA Scan.

About Radiation: Doses of radioactive elements used in nuclear imaging are very small and fall well within the safety limits determined by the Nuclear Regulatory Commission, and equivalent to an x-ray.

Special precautions: In general, pregnant and nursing women should not have a nuclear stress test. If you are pregnant, think you may be pregnant or are currently nursing, let your physician know.

Test results:
Test results will be discussed with you by your doctor.

Details of Your Upcoming Nuclear Test:

Appointment Date:_____

Appointment Time:_____

Please do not take the following medications within _____hours of your scheduled test:

_____

_____

Allergies: _____

Please check in 15 minutes before your appointment.

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For more information call (970) 221-1000, (800) 459-4241, or visit www.heartcenteroftherockies.com