

Procedures/Diagnostic Tests

Multigated Acquisition (MUGA or Radionuclide-Angiogram-RNA Scan)

You are scheduled for a MUGA scan (also known as a radionuclide angiogram). It is a type of heart scan. For this test, a small amount of radioactive material will be injected into a vein in your arm. With the aid of a computer and a special camera sensitive to this radioactivity, pictures can be taken of your heart.

The MUGA can tell your doctor several things about your heart: how well your ventricles are working, specifically how well your left ventricle pumps blood (the ejection fraction), and how blood flows inside your heart. You may be scanned during rest, or during rest and exercise.

Preparation

- Wear loose, comfortable clothing, or pajamas with pants. A shirt or gown that opens in the front is also helpful. (This allows electrodes to be placed on your chest.) Women may wear a bra. If exercise is planned, wear well-fitting exercise shoes.
- If you are having only a rest MUGA, you may eat a light breakfast.
- If an exercise muga is also scheduled, do not eat breakfast.

If you are diabetic, do not take insulin or oral hypoglycemics the morning of your test. Please bring your insulin and other medications you will need, as well as your glucometer, to the test.

- You will want to feel your best before this test, so if you have been short of breath, light-headed, tired, or have had chest discomfort, tell your nurse.

Note: Please bring medications (including inhalers) you may need during your stay or in the hospital.

Procedure

- Two injections will be given to you through your vein. The first (which contains phosphate) prepares the blood for testing. Fifteen to twenty minutes later, a small amount of radioactive material (radionuclide technetium 99m) will be injected. during your stay or in the hospital.
- You will be asked to lie on a flat, imaging table.

-
- Electrodes will be placed on your chest, and a special camera will be positioned over your chest. As the camera takes pictures of your heart, you will be asked to stay still and breathe normally.
 - If an exercise study is planned, you will lie flat on the imaging table while your feet are slipped into bicycle pedals. Shoulder supports will help position you, as well. When the camera is placed over your chest, you will be asked to begin pedaling. A doctor or nurse practitioner will be present for this part of the test. Every 2 minutes, pedaling will become a little harder, but you must try to keep a steady pace. When you reach the hardest level (the last few minutes), a 2- to 3-minute picture of your heart will be taken. This picture is the reason for the test, so if you need to stop pedaling, please tell the staff member present at least 2 minutes before you stop.
 - The test lasts about 1 hour. If exercise is done, it will take about 2 hours.

If you have questions about the procedure, please ask. Your nurse and doctor are ready to assist you at all times.

After the procedure

- Report any symptoms such as chest discomfort, shortness of breath, heart palpitations, or light-headedness, to the staff of the Nuclear Medicine Department.

Special instructions

- Please let your healthcare team know if you are pregnant, think you might be pregnant, or if you are breastfeeding. (We do pregnancy tests routinely on all women of child-bearing potential.) Because this test uses radioactivity, this test is not usually performed on pregnant or breastfeeding women.
- If you care for a newborn, let your healthcare team know so that they may give you special instructions.

This information is prepared specifically for persons taking part in clinical research at the National Institutes of Health Clinical Center and may not apply to patients elsewhere. If you have questions about the information presented here, talk to a member of your health care team.

Products/resources named serve as examples and do not imply endorsement by NIH. The fact that a certain product/resource is not named does not imply that such product/resource is unsatisfactory.

National Institutes of Health Clinical Center
Bethesda, MD 20892

Questions about the Clinical Center?
<http://www.cc.nih.gov/comments.shtml>
2006

