



MULTIGATED ACQUISITION SCAN - General Information

Multigated Acquisition Scan

GENERAL INFORMATION:

What is it? A multigated acquisition (MUGA) scan is a test that looks at the chambers and blood vessels of the heart. This can also be called cardiac blood pooling imaging, nuclear ventriculography (ven-trik-u-LOG-rah-fee), or radionuclide (ray-dee-oh-kleyed) ventriculography. This test shows caregivers how well the left ventricle of your heart is pumping. Caregivers will also tell you about your heart's ejection fraction (how much blood pumps out of your heart with each heart beat). Test results can also show how the walls of your ventricles move when they are contracting (beating) and resting.

Why do I need a MUGA scan? You may need the test if you have one or more of the following medical conditions:

- **Atrial septal defect:** This is a condition where there is a hole in the septum (wall) between the atrium (top two chambers) of your heart.
- **Cardiomyopathy:** Cardiomyopathy (kahr-dee-oh-meye-OP-ah-thee) is a condition where a part of, or all of the heart muscle becomes enlarged. Types of cardiomyopathy include dilated, idiopathic (id-ee-oh-PATH-ik), and peripartum (per-i-PAHR-tum).
- **Heart failure:** This is a condition where the heart cannot pump blood through your body well enough.
- **Lyme disease:** This is an infection that is caused by a tick.
- **Mitral valve stenosis:** This is a condition where there is swelling and scarring of the mitral valve leaflets (doors). The mitral valve is like a door between the right atrium and ventricle (chambers of the heart). The job of the mitral valve is to close to let blood move between the atrium and ventricle when the heart beats. This condition does not allow the mitral valve to work as well as it should.
- **Senile cardiac amyloid (AM-i-loid):** This is a condition where a waxy, starch-like substance grows in the heart, keeping it from pumping correctly.

Who should not have this test? You may not be able to have this test if your heart has been injured or if you had another nuclear scan. You may not be able to have this test if you take certain medicines used to treat a heart condition. This may include nitroglycerin (glyceryl trinitrate (nitroglycerin, Nitro-Bid®, Nitro-Dur®), and isosorbide dinitrate (Isordil®, Sorbitrate®). Tell your caregiver if you are pregnant, or think you might be. Caregivers may suggest waiting to have the test until after your baby is born. Caregivers may suggest waiting to have the test until after you have finished breast feeding. This should be done to prevent your baby from getting any of the radioactive tracer that is put into your body during the test.

What should I do to get ready for the MUGA scan?

- Do not eat or drink anything for hours before your test.



- Do not have food or liquids that have caffeine or alcohol for hours before the test. Caffeine may be found in some types of coffee, tea, soda, chocolate, sports drinks and foods. Certain over-the-counter medicines also contain caffeine.
- Do not smoke or use chewing tobacco for hours before the test.
- Wear or bring comfortable, loose-fitting clothes and walking shoes.
- Bring a list of all medicine you are taking, or the medicine containers. Ask caregivers if you need to stop taking any medicines for a time before the test.
- If you have diabetes and are taking insulin, ask caregivers if you need to change the amount of insulin you take before the test.
- **Informed consent:** You have the right to understand your health condition in words that you know. You should be told what tests, treatments, or procedures may be done to treat your condition. Your doctor should also tell you about the risks and benefits of each treatment. You may be asked to sign a consent form that gives caregivers permission to do certain treatments, or procedures. If you are unable to give your consent, someone who has permission can sign this form. A consent form is a legal piece of paper that tells exactly what will be done to you. Before giving your consent, make sure all your questions have been answered so that you understand what may happen.

How is a MUGA scan performed?

- When you arrive at the Nuclear Medicine department, you may need to change into comfortable clothes. A caregiver will insert an intravenous (IV) line into a vein, usually in your hand or arm. Electrodes (patches) will be placed on your chest. The electrodes record your electrocardiogram (ee-lek-troh-KAHR-dee-oh-gram) or "EKG". This is a test that records the activity of your heart. A solution containing a tracer substance is put into the IV. The tracer attaches to red blood cells and moves through your blood. The tracer can be tracked as it moves through the heart using a special camera or scanner. Pictures may be taken at the same time as the pictures being taken.
- A camera is placed over your chest to take the pictures. You will need to lie quietly while the pictures are taken. You may need to be tested while you exercise, or after caregivers give you special medicine. If you need to be tested while exercising, you will walk on a treadmill or pedal a stationary bicycle. The speed and incline of the treadmill, or the resistance of the bicycle, may be changed during the test. Caregivers watch your EKG and blood pressure while you are exercising.

What will I feel during the test? You may feel discomfort when the IV is put in your vein before the test. Tell caregivers if you feel chest pain, feel short of breath or dizzy, or your legs feel very tired.

What should I do after the scan? After the scan, you may continue your usual activities, eat, drink, and take your usual medicines. Drink plenty of fluids, such as water and juices, to help flush the tracer out of your body. The tracer leaves your body quickly through your urine. Your caregiver may tell you to flush the toilet three times after each time you use the toilet. This makes sure that the amount of tracer that leaves your body does not stay in the toilet bowl.

What are the risks of having this test? There is a very small chance that you could have abnormal heartbeats or a heart attack. The amount of radiation that you receive is very small. If you do not have a MUGA scan, caregivers may not be able to decide the best way to treat your health problem. You could get worse or you could die. Call your caregiver if you are worried or have questions about your medicine or care.

CARE AGREEMENT:

You have the right to help plan your care. To help with this plan, you must learn about your health condition and how it may affect you. You can then discuss treatment options with your caregivers. Work with them to decide what care may be used to treat you. You always have the right to refuse treatment.



