

Adenosine MRI Stress Test

Preprocedure Patient Information

What is an adenosine magnetic resonance imaging stress test?

The magnetic resonance imaging (MRI) machine is a tube with a center opening that is about three feet wide. A table slides into the central opening and the patient lies on the table. Pictures of the heart are created using a magnetic field, radio waves and computers. No X-rays are used to create the images.

The images made by the MRI will allow your doctor to look at the anatomy and functioning of your heart. In addition, any areas of your heart not receiving a good supply of blood and any scarring of the heart muscle can be clearly seen. The test uses medication to increase the amount of blood flow to the heart to look for signs of narrowing of the coronary arteries that supply blood flow to the heart muscle.

What are the benefits and risks of the stress test?

This test will help your doctor diagnose whether your heart muscle is receiving enough blood flow, and whether or not there are areas of scarring from prior heart attacks.

The risks of the test are very small and are associated with the medication that is used. When receiving adenosine, you may get facial flushing, mild headache, mild shortness of breath, chest tightness, arm or jaw discomfort, fast heartbeat/palpitations or slow heartbeat, low blood pressure, dizziness and lightheadedness. It is important to tell your nurse how you feel during the test and if you are experiencing any of these symptoms.

Although rare, complications can occur during this test and may include changes in your blood pressure or heart rhythm. Severe complications such as the possibility of heart attack and/or death are extremely rare. The careful monitoring of your blood pressure and continuous heart monitoring serve to minimize the small risks of the test.

Why should I have this test?

Some of the common reasons for getting the stress test are:

- To help find the cause of chest pain
- To check for possible blockage in the heart arteries
- To check on the heart after heart surgery, heart transplant or a heart attack
- To see if your medication is treating your chest pain and/or irregular heartbeats
- To use as a baseline before treatment or surgery

What are some of the reasons why I should NOT have this test?

Some people cannot have the test if they have the following conditions. Please notify your doctor immediately if you have:

- A cardiac pacemaker, cardiac defibrillator
- A neurostimulator
- Ear implants
- Cerebral aneurysm clips from brain surgery
- Had recent heart attack (less than three days prior)
- Asthma
- Severe obstructive pulmonary disease
- Unstable angina
- Severely high or low blood pressure
- Heart block or sick sinus syndrome
- Had severe heart failure
- Claustrophobia (fear of enclosed spaces)
- A history of metal fragments in the eye

Also notify your doctor if you:

- Are pregnant or breastfeeding
- Weigh more than 300 pounds or are overweight for your height
- Are allergic to adenosine
- Are currently taking aminophylline, theophylline or dipyridamole

About the Procedure

Before the test

- Do not have any caffeine or tobacco for at least 24 hours before the test. (No tea, coffee, decaffeinated coffee, soft drinks or chocolate.)
- You cannot have anything to eat or drink for 8 hours before your test.
- Take your medications as instructed by your doctor.

The day of the test

- The test takes about 60 to 90 minutes. Please allow at least 2 to 3 hours from the time you arrive to the time you leave.
- Bring a list of your current medications.
- Please arrive and register at the Radiology Registration Desk, one hour prior to the scheduled test time.
- You will be asked to change into a hospital gown and remove all jewelry, dentures and hearing aids.
- Before the test starts, you will be asked questions about your medical history and the medication(s) you are taking. This is to make sure it is safe for you to have an MRI scan. The procedure will also be explained to you.
- An electrocardiogram (ECG) will be taken. This is a recording of your heartbeat on paper.
- Two intravenous (IV) lines will be placed into your arms by the nurse. You will be connected to a blood pressure cuff and heart monitor so your blood pressure and heartbeat can be watched during the study. If there is a problem with these recordings, the test will be stopped.
- You will be moved onto a table that goes into the MRI scanner.

During the test

- The first 10 to 20 minutes, pictures will be taken to observe how your heart is working.
- Your heart will be stressed with a medication called adenosine. This medication affects your heart in a manner similar to exercising, by increasing your heartbeat and blood pressure. A physician will be present in the scanner area while the medication is

given. The medication will be stopped if you develop severe chest pain, severe shortness of breath or major changes in your heartbeat. After stopping the medication, any symptoms you are feeling will wear off very quickly. Rarely will you need medication to stop any chest pain, shortness of breath or slow heartbeat.

- While your heart is “stressed” you will be given a contrast agent called gadolinium-DTPA and a picture will be taken of your heart. This helps show areas of abnormal blood flow in your heart.
- After a short break, more pictures will be taken to look for any scarring of the heart muscle.
- During the test, you will hear knocking sounds as the machine takes the pictures. We will also prompt you with instructions. For example, we may ask you to hold your breath for 8 to 10 seconds.
- It is important for you to stay as still as possible because movements can create glitches in the pictures.
- At the end of the procedure, another ECG will be done and your IVs will be removed.

After the test

- You may resume your normal activity unless your doctor tells you differently.
- Take your regular medications as directed unless your doctor tells you differently.
- Within two to three business days, the test results will be sent to the doctor who ordered the test. You will need to contact your doctor’s office to discuss the results of your test.
- Keep any scheduled follow-up appointments with your primary doctor.

For More Information

If you have any questions or concerns, regarding your procedure, please call Ginette Concepcion, R.N. at (804) 828-4914 or Dana Wilmoth Britt, N.P. at (804) 628-2340.