

# **Dobutamine Stress Cardiac MRI Information and Consent Form**

## **What are the objectives of Dobutamine Stress Magnetic Resonance Imaging (MRI)?**

The main objectives of this exam are to diagnose coronary artery disease, to evaluate the significance of known coronary artery disease prior to angioplasty/stenting or coronary artery bypass surgery, or to determine cardiac risk assessment prior to non-cardiac surgery.

## **What does stress imaging do and why can't you determine this at rest?**

The purpose of stress imaging is to determine if your heart muscle is receiving adequate blood flow through your coronary arteries. When you are resting, blood flow through a narrowed coronary artery may be adequate to supply your heart muscle with sufficient oxygen to contract normally, and imaging of the heart muscle at rest would probably not reveal any abnormality. When you exercise your heart pumps more vigorously and your heart muscle requires more oxygen. Simultaneously, your coronary arteries dilate in order for your heart muscle to receive adequate blood needed to supply the increased oxygen demand. Narrowed coronary arteries cannot dilate and blood flow is diminished to regions of heart muscle supplied by narrowed arteries. MRI imaging during this time of stress can detect this diminished blood flow by identifying poorly contracting heart muscle.

## **What is Dobutamine Stress MRI?**

Dobutamine Stress MRI (DSMR) has recently been developed as an alternative to Echocardiography, which is a very common non-invasive method to detect and assess coronary artery disease (CAD). DSMR has become a standard method of examining patients whose hearts cannot be adequately visualized with DSE, and many cardiologists prefer DSMR's superior image quality. New generation MRI machines can capture detailed images of the beating heart. Normal healthy heart muscle contracts or squeezes the blood with every heartbeat. Heart muscle that is not receiving a normal amount of blood during stress will not contract normally, which can be seen during the MRI exam.

The purpose of the Dobutamine Stress exam is to mimic exercise. Based on your weight, a specific amount of Dobutamine is intravenously administered at a constant rate. It will cause your heart to beat faster and contract more vigorously as if you are exercising. A cardiologist and nurse will monitor your ECG, heart rate, blood pressure, and various other parameters. A radiology technologist will frequently acquire cine images of your heart throughout the procedure. Simultaneously, a radiologist will assess your heart's function. Approximately every 3 minutes the rate of dobutamine infusion will be increased. As this occurs, you will be aware of your increasing heart rate. This will continue until the MRI images show diminished heart function or your target heart rate (based on your age) is reached.

### **How is Dobutamine Stress MRI performed?**

- A preliminary EKG will be obtained. A blood pressure cuff will be placed on your arm, an oxygen-monitoring device will be taped to your finger, and one or two IV lines will be started in your arms.
- You will move onto the MRI table and an MR detection device will be placed over your chest. Several MRI images of your beating heart will be obtained while you are resting.
- The Dobutamine infusion will begin at a dose determined by your weight. Approximately, every 3 minutes the infusion rate will be increased. At each infusion rate MR images of your heart will be obtained and compared with the resting images. When a wall motion contraction abnormality is detected or your target heart rate (based on your age) is reached, the Dobutamine will be stopped. This part of the test will usually take about 12-15 minutes.
- In specific cases, MRI contrast material (Gadolinium) may be intravenously injected and its distribution into the heart muscle observed with MRI imaging (see Adenosine Stress MRI consent form), which will add time to the examination.
- When all necessary MRI imaging has been completed, you will be removed from the MR machine and all monitoring devices removed. A repeat EKG will be obtained.
- Prior to discharge, the physician monitoring the test will give you instructions.

### **What are the risks of MRI?**

Unless you have a pacemaker or other particular surgically implanted device, there are no known biologic risks to magnetic resonance imaging. Prior to the exam, you will be given a routine MRI screening form that will contain questions about your medical history and will determine if there are any reasons why you shouldn't undergo an MRI exam.

### **What are the complications and side effects of Dobutamine?**

Side effects of Dobutamine include chest discomfort, changes in heart rate and blood pressure, headache, facial flushing, skin tingling, palpitations, nausea, and shortness of breath. These are usually relieved when the dobutamine infusion rate is diminished. Rarely (less than 1%) Dobutamine may induce a heart irregularity or heart attack requiring hospitalization. Because of these risks, a cardiologist is always present during the administration of Dobutamine.

### **What should I do before the test?**

Wear comfortable clothing and arrange for someone to drive you to and from the test. Do not drink or eat 4 to 6 hours before the test and do not consume caffeine-containing food or beverages for 6 hours before the test. Check with your physician or cardiologist about temporarily discontinuing certain heart medications (for example, Beta-blockers and Theophylline-containing medication) prior to this test. Otherwise, please take all of your other normal medication, unless instructed otherwise.

### **Consent**

**Your signature on this form indicates that you have read and understood the above information, that you are not pregnant, and that your questions have been answered.**

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature