



EACVI

European Association of
Cardiovascular Imaging

What is a stress cardiac MRI?

A stress cardiac MRI is an examination in which a medication is given to mimic the effect of exercise as you are having the scan. Two types of medications are commonly given. Either:

- Adenosine is a vasodilator, which temporarily increases the blood flow in the heart. If the blood flow is reduced during the administration of adenosine, this may indicate a narrowing of the coronary arteries.

or

- Dobutamine is a drug that makes the heart beat both faster and stronger. If a segment(s) of the heart muscle moves abnormally while the drug is being administered during the scan, this indicates insufficient blood flow as a result from narrowed coronary artery(s).

Uses / benefits of the test

A stress pharmacological cardiac MRI is performed to find out if there is any evidence of blockages of the arteries supplying your heart muscle (coronary artery disease). In case major narrowings of the coronary arteries are present, the blood flow to the some areas of the heart muscle can be compromised during the medication administered. The results of the scan will help your doctor make and discuss the best treatment plan for you.

When do we use it

A stress CMR can identify which segment(s) of the heart muscle is not receiving a sufficient blood supply during effort.

How is it performed and what will happen during the scan

The stress cardiac MRI is the same as described in "How is a cardiac MRI performed and what will happen during the scan?" but the scan will include a few extra steps:

1. A 12 lead electrocardiogram (ECG) will be done before the scan to ensure there are no funny heart rhythm abnormalities. Your blood pressure will also be checked prior to the scan.
2. During scan, adenosine or dobutamine will be administered. While the medication is running, you may feel, some chest tightness, increased awareness of your heart beats (palpitations), flushing of your skin or a headache. You will not experience all 4 symptoms- one or 2 symptoms or nothing at all. If you are experiencing any symptoms, please let the team performing your scan know. These symptoms wear off shortly after stopping the drug. Your blood pressure, heart rate and rhythm will be serially monitored during the administration of the medication. The effects of adenosine or dobutamine wear off a few minutes after discontinuation.



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The examination takes about 45 – 60 minutes, but please take into account extra time will be needed before and after the scan to plan you day properly.

Preparation for the examination

The instructions you will receive prior to your scan will vary from facility to facility.

Your physician may ask you to stop medication 24h before the exam that may interfere with the test, such as theophylline or dipyridamole, beta-blockers or calcium channel blockers. Please fast from food 4 hours and clear fluids 2 hours before the scan. Before a stress CMR with adenosine: Do not consume chocolate or caffeinated products such as coffee, tea or cola or decaffienated coffee for 24h before the test. Consuming these products may produce a false negative test result and will imapct the treatment you are offered.

If you are asthmatic or suffer from COPD, please let the team scanning you know you have this issue and bring your inhalers with you.

Please bring your medication list with you.