

Dobutamine stress echocardiogram study

Cardiology Department Patient Information Leaflet

Introduction

You have been given this leaflet as your doctor has suggested you would benefit from having a dobutamine stress echocardiogram (DSE) study. This leaflet gives more information about what this involves.

If you have any questions or concerns, please do not hesitate to contact a member of the Cardiology Department (**Monday to Friday, 9am – 5pm on 01384 456111 ext. 3582/2728**).

What is a dobutamine stress echocardiogram?

It is an ultrasound test using specific drugs to look at your heart muscle during rest and at 'stress' when it is beating faster, as if you have been exercising or doing manual work.

Ultrasound uses high frequency sound transmitted from a special probe. The probe receives ultrasound echoes that bounce back from your heart. These echoes enable moving pictures of the heart to be displayed on a monitor.

The DSE test uses special drugs, which are called dobutamine +/- atropine, to stimulate the heart to beat faster, as if you have been exercising or doing manual work. Ultrasound images are obtained to see how your heart responds to increased workloads. You will be lying down on your left side during the test.

What are the benefits?

The pictures of your beating heart can tell the doctor whether or not the heart muscle/heart valves are working properly under extra stress. It can give the doctor information about whether you may have:

- Narrowing of the arteries of your heart that may be causing some of your symptoms.
- Whether there are any areas of your heart muscle that can be 'woken' up, that have previously been damaged by a heart attack.
- Assessing the aortic valve severity of calcification, to allow the decision to be made for interventional or medical therapy.

It will help your doctor aid diagnosis of your heart condition and give information on how this heart condition may be treated.

What are the risks?

There are no known risks from the use of ultrasound for scanning. The dobutamine (stress) test is relatively safe and widely used in people with chest pain or who have symptoms that limit their ability to exercise.

A small number of people may experience the following side effects of the dobutamine, such as: flushing of the face, cold/shaky sensation, thick/muzzy head, palpitations as your heart rate increases, nausea and, very rarely, vomiting. All of these side effects usually go away very quickly, once the test is stopped.

You may also experience your usual symptoms, such as chest pain, shortness of breath, or dizzy spells. While this is expected during the test, it is important that you let the cardiac physiologist and doctor know, so that it can be noted down as well as additional ultrasound images can be taken. This will help to aid your diagnosis.

There are a few risks to the procedure itself, which will be discussed before the procedure goes ahead. You will be asked to sign a consent form, in order for us to proceed with the test.

There is approximately 1:1000 risk of an abnormal heart rhythm occurring. If this happens, the cardiac physiologist and doctor are highly trained and well equipped to return your heart back into a normal rhythm.

The dobutamine (stress) echo is widely used in patients with suspected or existing coronary artery disease. This means that there is a small risk of approximately 1:2000 of more serious side effects such as a heart attack or stroke in these patients, which are more likely to occur during or shortly after the procedure.

There is also approximately 1:10000 risk of having an adverse reaction to any of the drugs given during the procedure.

The test will involve you having a contrast solution called Sonovue injected into a vein to increase the quality of information obtained from the scan. The injection usually causes nothing more than a warm feeling passing around your body.

Rarely, if you have a known allergy, this may very slightly increase your risk of an allergic reaction to the contrast solution. The following symptoms may occur: itching, difficulty breathing or you may get a rash. If you have any special allergies, particularly to eggs, you should tell the doctor before the test.

This type of contrast medium does not have an adverse effect on your kidneys.

Serious side effects are very rare.

What are the alternatives?

The exercise (stress) echo is an alternative test if you are able to exercise but it is more difficult to get high-quality images of the heart.

How do I prepare for the test?

You may need to stop taking some of your medications before the test. You will be given specific instructions about this.

If you are taking beta-blockers such as atenolol, bisoprolol, carvedilol, metoprolol or sotalol, please stop the medication 48 hours before the test, unless you are advised not to. Failure to follow these instructions will result in the test having to be rescheduled/postponed to a later date. If you are unsure, please phone the Cardiology Department on 01384 456111 ext. 3582/2728 (9am to 5pm, Monday to Friday).

What happens during the test?

A cardiac physiologist will usually carry out the scan. The doctor is responsible for administering the drugs. Both the cardiac physiologist and the doctor are responsible for your safety throughout the test. They will explain the test and ask you to sign a consent form to confirm that you understand the test and agree to go ahead with it. If you have any questions, or concerns, you will be allowed to raise these before proceeding.

The cardiac physiologist will ask you to undress to your waist, remove your shoes and then lie on the bed in the semi-darkened room. They will put three sticky ECG electrodes on your shoulders and abdomen (stomach) to monitor you during the procedure.

Occasionally, a 12 lead ECG will be performed before the test is started to determine your resting heart rhythm, and allow comparison with previous ECGs if you have had them before.

The doctor or cardiac physiologist will insert a small needle into a vein in your arm to allow give you to be given the drugs. Every three to five minutes (depending on the protocol selected by the doctor) the concentration of the drug will be increased a little and ultrasound pictures will be taken. Additional images may be obtained at any point during the test.

Ultrasound waves do not pass easily through air so we put a clear, water based gel onto the probe. This forms an air free seal when it is held against your chest. Firm pressure is required for an air free seal and you may find the pressure mildly uncomfortable. Please do not hesitate to tell the physiologist if this is the case.

As the levels of the drug are increased you may be aware of your heart thumping/beating faster as it works harder. You may also be aware of a tightening or pain in your chest, arm or neck.

Do not worry about this, but it is important to tell the cardiac physiologist/doctor, who will be keeping a close eye on you. Additional images will be taken if you experience your symptoms.

When the drug stimulation has reached the required level, which is usually 85 per cent of your predicted heart rate that is calculated against your age ($220 - \text{patients age} \times 0.85$) the drug infusion will be stopped. If we struggle to obtain this increase in heart rate we will administer an additional drug called atropine, to encourage your heart rate to increase to the desired level. Sometimes, we will do our best to avoid giving atropine, by asking you to perform leg raises and/or squeeze a stress ball.

We will continue to monitor your heart and will take some more pictures for about 5-10 minutes, until everything has returned to normal. If you are routinely prescribed a beta blocker, the doctor may give a dose of metoprolol through the cannula, at the beginning of the recovery stage to help your heart rate return to normal.

How long does it take?

The test can take about an hour.

What happens after the test?

When the doctor is satisfied that all effects of the drug have worn off, monitoring will be stopped and you can get dressed again.

You will be asked to sit in the cardiology waiting room for a further 30 minutes, to allow the side effects of the dobutamine to completely be out of your system. The cannula will remain in your arm until the 30 minutes is up, after which a cardiac physiologist will remove it and you will be allowed to go home. You will be advised to take it easy for the rest of the day.

Can I drive after the test?

Yes: if you have only been given dobutamine, you will be allowed to drive home.

No: if atropine is needed to be used during this test, it has the side effect of dilating the pupils of the eye which may make your vision blurred. The effect will pass, but you should not drive until your vision is clear again.

This is usually 24 hours after the administration of this drug.

We advise that you bring a relative/friend who can drive with you to the department. They will be asked to have a seat in the waiting room while the procedure goes ahead.

You can come alone if preferred, but will need to arrange someone to drive you home after the test if atropine is given.

How do I get the results?

The results of the test will be sent to the consultant who requested the scan. They or one of the team will send you an appointment to see your consultant for these results.

If you have any questions, or if there is anything you do not understand about this leaflet, please contact:

The Cardiology Department on 01384 456111 ext. 3582/2728
(9am to 5pm, Monday to Friday)

Russells Hall Hospital switchboard number: 01384 456111

This leaflet can be downloaded or printed from:

<http://dgft.nhs.uk/services-and-wards/cardiology/>

If you have any feedback on this patient information leaflet,
please dgft.patient.information@nhs.net

This leaflet can be made available in large print, audio version and in other languages, please call 0800 073 0510.

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此宣传单可提供大字版本、音频版本和其它语言版本，请拨打电话：0800 073 0510。

Ulotka dostępna jest również w dużym druku, wersji audio lub w innym języku. W tym celu zadzwoń pod numer 0800 073 0510.

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Aceasta brosură poate fi pusă la dispoziție tipărită cu caractere mari, versiune audio sau în alte limbi, pentru acest lucru va rugăm sunați la 0800 073 0510.

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