

Dobutamine stress echocardiography

Procedure information for patients

Your doctor has recommended a test called a **dobutamine stress echocardiogram (DSE) or “stress echo”**. Please take some time to read this information sheet and discuss any questions or concerns you may have with a medical professional.

What is a stress echo?

Echocardiography (echo) uses ultrasound waves to create detailed images of your heart. Moving images of your heart are used to assess your heart function. In patients who have a narrowing of the heart arteries, the heart muscle may experience a limited blood supply with exercise. This in turn can affect the heart function, which can be seen on the echo scan.

A stress echo involves exercising the heart using a continuous injection of a drug called dobutamine (similar to adrenaline produced by the body). Ultrasound images are obtained at several stages to assess the heart function. With this test, we can assess how different areas of your heart contract and the likelihood that there is reduced blood supply to certain areas that could cause symptoms (such as chest pain / angina or breathlessness). In some cases, the test may be used to assess the severity of a heart valve narrowing (aortic stenosis).

The results from the procedure will guide you and your doctor in deciding what is the best treatment for you. This may mean receiving treatment with medications or undergoing a further procedure to improve the blood supply to your heart (such as an **angioplasty or stenting** to widen or open the heart arteries). In other cases, it may be used to help other doctors decide whether you are **fit to drive** or **undergo an operation** (particularly vascular surgery).

How is a stress echo performed?

Before the procedure:

We will usually ask you to **stop any beta-blocker medications** (e.g. bisoprolol) **2 days prior to the test** as they make the dobutamine less effective and we may not be able to adequately stress the heart.

If the test has been requested for a professional driving assessment (usually by the DVLA) beta blockers should be stopped **5 days** beforehand.

You should take all your other medications as usual.

Please eat normally prior to the test- it is preferable not to fast beforehand. You may be advised not to drive for up to 6 hours following the test. Please use public transport or bring someone with you who can drive you home.

The doctor or physiologist performing the test will talk you through the details and will ask you to sign a consent form before starting the test.

During the procedure:

First you will be asked to undress from the waist up (you will be offered a hospital gown) and to lie on a couch. Several ECG stickers will be placed on your chest, arms and legs so that we can monitor the heart tracing. We will also attach a blood pressure cuff on your arm so that your blood pressure can be measured throughout the procedure. A small plastic tube or “cannula” will be placed into a vein to give dobutamine and any other medication required.

You will be asked to lie back slightly onto your left-hand side for the procedure, which takes approximately 30-40 minutes. Let a member of staff know if this may be difficult for you. An ultrasound sonographer will take some pictures of the heart using the echo machine which involves pressing the probe against your chest wall using some jelly to improve the pictures. This can be uncomfortable.

An injection of **echo contrast (tiny gas bubbles)** into the vein is used to improve the quality of the images, as the bubbles reflect the ultrasound waves very well. This will help us get the best images of your heart. The bubbles don't last very long in the body so the injections will be given through the cannula at several points throughout the test.

A continuous infusion of the dobutamine medication into your vein will then be started. Initially you may just feel some tingling of your scalp and an awareness of your heart beating which is normal. Further images will be taken of your heart every few minutes. The dose of the dobutamine will be increased gradually until you have reached a specific target heart rate (this is determined by your age) or we have reached the maximum dose.

If you develop any symptoms during the test, please let the doctor know as we may need to stop the test early if your symptoms are worsening. Sometimes a **booster drug called atropine** is also given into the vein to help reach the required heart rate. Atropine can affect your ability to focus your eyes for a few hours afterwards so you should not drive.

What are the risks of the procedure?

In recommending this procedure, your doctor has balanced the benefits and risks of the procedure against the benefits and risks of not proceeding. Most people tolerate the procedure very well with no significant ill effects.

Rare risks or complications (less than 1 in 100) include:

- Low blood pressure following the dobutamine injection (around 1 in 400). This is treated by replacing the fluid into your vein
- An abnormal irregular heart rhythm called atrial fibrillation (around 1 in 400) which will usually settle by itself but may require a short admission to the ward for monitoring
- Prolonged abnormal heart rhythm (around 1 in 2,000). This may need an electric shock to correct
- Prolonged chest pain leading to a heart attack (less than 1 in 2,000)
- Significant allergic reaction to the echo contrast called anaphylaxis (approximately 1 in 10,000)
- Death as a result of this procedure is extremely rare

What happens next?

Once your heart rate has settled you will be allowed to go home. If you received any booster drug (atropine) your eye focussing may be affected, and you **should not drive for a few hours** depending on the dose you were given.

Your doctor will speak to you about the procedure and answer any questions you may have. You will also be asked to sign a written consent form to confirm you are happy to have the procedure.

Public transport and travel information:

Bus details are available from Lothian Buses on 0131 555 6363 or www.lothianbuses.co.uk, Traveline Scotland on 08712002233 or www.travelinescotland.com. Train details available from the National Enquires on 03457 484 950 or www.nationalrail.co.uk

Patient Transport:

Patient transport will only be made available if you have a medical/clinical need. Please telephone 0300 123 1236 (calls will be charged at local rate) up to 28 days in advance to book. Make sure you have your CHI number when booking. The CHI number can be found on your appointment letter. Hard of hearing or speech impaired please use Text Relay: 18001 0300123 1236 (calls charged at local rates). To cancel patient transport please call 0800 389 1333 (Freephone 24hr answer service).

