

**Patient
Information**

Exercise Stress echocardiogram (ESE)

Introduction

This leaflet gives you information about your planned exercise stress echocardiogram.

What is a stress echocardiogram?

You may have already had an echocardiogram performed, usually just called an 'echo'. This is a non-invasive imaging test using ultrasound to look at your heart.

Ultrasound is very high-frequency sound which cannot be heard by the human ear. It is used to visualise the heart and is safe and painless.

Performing an echo when your heart is working hard may help us to find the cause of your symptoms. Getting your heart beating faster and stronger can be achieved by exercise or medication and when this is combined with an echo it is known as a stress echo.

The stress echo will be supervised by a Cardiologist and/or a specially trained Cardiac Physiologist and can take up to an hour, including preparation and recovery time.

Why am I being asked to have this test?

Your heart specialist (doctor or nurse) has asked for this test to assess your heart function when it is working harder.

Having this test can help us find whether the symptoms you experience during physical stress or exercise are due to a heart problem.

This test can be used to:

- Investigate chest pains and/or breathlessness.
- Assess how well previous heart stents or bypass surgeries are working.
- Assess your risk before having an operation.
- Check whether your heart muscle has been permanently damaged after a heart attack, or can recover.

Reference No.

GHPI1877_11_24

Department

Cardiology

Review due

November 2027

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- Find out more about a known heart valve problem.

Sometimes we do the test when we already know you have a heart problem and we want to find out if exercise makes it worse, or if it might stop you exercising safely.

Exercise stress echocardiogram (ESE)

This test combines a normal echo with an exercise test. You will have a resting echo and then will be asked to do some exercise, usually by pedalling a stationary bike.

What does an exercise stress echo involve?

You will be weighed and have your height measured before the test begins. This is so we can calculate some of our measurements.

The test will be explained to you, including a discussion about the symptoms you may experience and possible risks.

You will be asked to undress to the waist and offered a hospital gown to wear. You will then be asked to get onto the exercise bike. The exercise bike reclines so you will be in a semi flat position. The bike can also rotate, so you are slightly tilted to your left which helps us take the best images of your heart.

ECG electrodes (sticky pads) will be attached to your chest and connected with wires to the echocardiogram machine. This will monitor your heart rate and rhythm during the test.

The test is performed in semi-darkness so the lights will be dimmed once you are comfortable.

We may insert a small plastic tube (cannula) into one of the veins in your arm so we can give you any medication or contrast (dye to improve the image quality) if needed.

The sonographer will place the echocardiogram probe on your chest (this is like a thick blunt pen) with cold lubricating jelly (this helps to get good contact with your skin).

Before you start the exercise, a number of pictures of the heart will be recorded from different areas of your chest. Once this has been done, we will ask you to start cycling.

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We will measure your heart rate, blood pressure and heart tracing before you start and at various points during the test.

The exercise will get harder every 2 to 3 minutes. We will take ultrasound pictures of your heart during exercise and after we ask you to stop.

In some cases, an intravenous ultrasound enhancing agent (contrast) may be given during the test. This can help to improve the image quality and make the results easier to read.

During the exercise test, if you notice symptoms such as chest pains, breathlessness or dizziness you must let the doctor or physiologist know.

Most symptoms settle quickly when you stop exercising but we may need to stop the test early if your symptoms become severe or there are concerns with your blood pressure or ECG.

Sometimes we may need to use a medication, called atropine, during the test to get your heart rate to target. We will not know if this is needed until the test itself. **If you are given this medication (atropine), you cannot legally drive for 24 hours.**

After the test, you will be asked to stay lying down until your heart rate and blood pressure have returned to their resting levels. Once you feel well, we will take off the electrodes and you will be able to get dressed.

Preparing for the stress test

Unless told otherwise, you will need to stop taking **betablockers** (atenolol, bisoprolol, metoprolol) for **48 hours** before the test.

Certain **calcium channel blockers** should also be stopped for **48 hours** prior to the test. These include diltiazem (Tildiem, Adizem) and verapamil (Securon).

You can continue to take Amlodipine.

All other medication can be taken as normal. If you are not sure about your medications, please contact the Cardiac Investigations team for advice – the contact details are at the end of this leaflet.

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We recommend that you only eat a light meal before the test. **Do not have anything to eat for 2 hours before your appointment. Also do not smoke for 2 hours before the test.** You can continue to drink normally.

You should wear comfortable, loose-fitting clothing such as a top and skirt or trousers (not a dress), jogging bottoms, leggings or shorts and trainers (which will not slip off your feet) so that your movement will not be restricted when completing the exercise during the test.

There will be cold drinking water available but you may wish to bring your own drink.

You must contact us if you:

- are pregnant or think that you may be pregnant. The test may be delayed until after your baby is born.
- are lactating or breastfeeding, you can resume breastfeeding 2 to 3 hours after the test as any medications given will quickly leave the body.
- are experiencing unstable heart symptoms, including increasing frequency of angina (chest pains) or rhythm disturbance, or if you have artificial heart valves.
- have been diagnosed with heart inflammation or infection or if you have any severe liver or kidney disease.

Risks, contraindications and possible side effects of the test

Exercise stress echocardiography is extremely safe and has few side effects. The main risks are due to your underlying heart condition. The risk of inducing a heart attack or stroke or dangerous heart rhythm during exercise is less than 1 in every 5,000 patients.

If we need to use ultrasound contrast or atropine, these medications may cause side effects, although these are rare and are not usually serious. Some patients might experience serious side effects which may require treatment. The risk of a life-threatening reaction is around 1 in every 10,000 patients.

If you have had allergic reactions to any medicines before, please let us know before the test is started.

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During the test, you must **tell the doctor or physiologist straight away** if you notice any of the following side effects, as you may need medical treatment:

- Swelling of the face, lips, mouth or throat which may make it difficult to swallow or breathe
- A skin rash
- Swelling of your hands, feet or ankles.

Are there any alternatives to a stress echocardiogram test?

Other imaging investigations may be options, such as CT, MRI or nuclear imaging but your heart specialist has decided that this test is appropriate for you.

You should talk about any concerns you may have about the test with your heart specialist.

After the procedure

Once your blood pressure and heart rate has returned to normal, you will be able to go home.

If you have been given atropine as part of your stress echo, you must not drive or operate machinery for 24 hours. This will have already been explained to you before the test.

Results

You will not normally be given the results straight away as we need to make measurements and interpret the echo pictures. We will write to the doctor or nurse who referred you for the stress echo.

Contact information

Cardiac Investigations

Tel: 0300 422 6551

Monday to Friday, 9:00 am to 4:00 pm

Content reviewed: November 2024

Making a choice

Shared Decision Making

If you are asked to make a choice, you may have lots of questions that you want to ask. You may also want to talk over your options with your family or friends. It can help to write a list of the questions you want answered and take it to your appointment.



Ask 3 Questions

To begin with, try to make sure you get the answers to three key questions if you are asked to make a choice about your healthcare.

1. What are my options?
2. What are the pros and cons of each option for me?
3. How do I get support to help me make a decision that is right for me?

These resources have been adapted with kind permission from the MAGIC Programme, supported by the Health Foundation

* Ask 3 Questions is based on Shepherd HL, et al. Three questions that patients can ask to improve the quality of information physicians give about treatment options: A cross-over trial. Patient Education and Counselling, 2011;84: 379-85



<https://aqua.nhs.uk/resources/shared-decision-making-case-studies/>