St George's Healthcare NHS
NHS Trust

Inherited heart disease clinic
Cardiology department

Information for patients

Living our values – excellent, kind, responsible, respectful

This has been endorsed by the Patient Information Group PInG

May 2012

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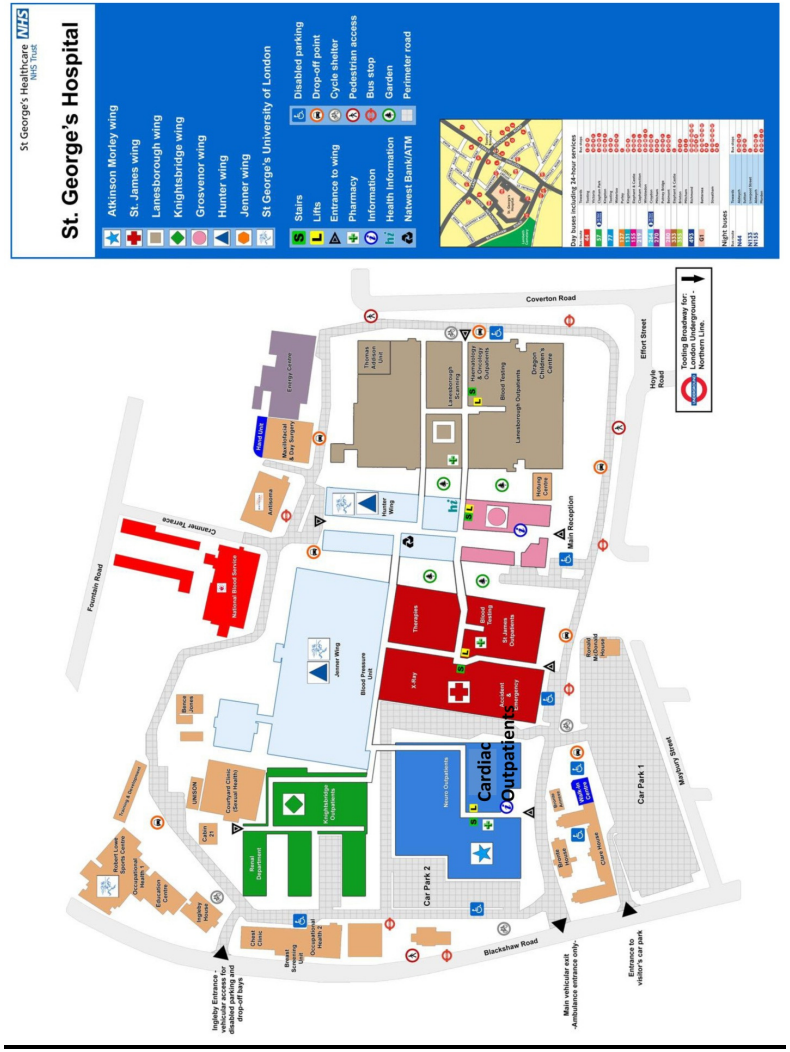
Cardiology outpatients is in Atkinson Morley Wing on the ground floor. To view this map online go to: http://www.stgeorges.nhs.uk/findstgeorges.asp



Inherited heart disease clinic

You have been referred for an appointment in the inherited heart disease clinic at St George's Hospital.

This is probably because:

(a) A family member has been diagnosed with a hereditary condition.
(b) A family member has died suddenly from a cardiac condition that may be inherited.
(c) You have symptoms which require further tests to exclude a serious heart condition
(d) You are an athlete with minor abnormalities on a recent screening electrocardiogram (ECG)

At your first appointment you will undergo several tests before seeing the doctor. These may include an ECG, echocardiogram, exercise test and Holter. These tests, as well as others that may be required, are described below. You should allow up to three hours for your appointment and longer if you have been told you require an ajmaline test.

The clinics can be emotionally challenging for family members in some instances and some of you may not wish to have discussions in the presence of other family members. Please do inform us of these requirements when you attend clinic initially (Step 2 see below).

If you need to change your appointment for any reason please call central booking on 0208 725 0007.

For further information on Inherited Heart Disease please go to the CRY website: http://www.c-r-y.org.uk/medical_conditions.htm

Or the British Heart Foundation website:

http://www.bhf.org.uk/default.aspx

When you arrive at clinic

Step 1
Report to cardiothoracic outpatient reception desk to confirm you have arrived.

Step 2
You will be directed to the cardiac investigations unit.

Step 3
You will have a variety of tests in succession at the cardiac investigations unit which may include an ECG, echocardiogram, exercise test and a 24 hour ECG. Please ensure you have appropriate clothing and footwear for your investigations.

Step 4
Following your tests, you will come back into the clinic to be seen by your consultant or a member of his team. The doctor will go through your history and provide a detailed explanation of your tests.

The entire process may take up to three hours (and if you are having an ajmaline test it may be all day). Please bring some reading material. There are several shops and canteens where you will be able to purchase light refreshments or have a snack in between tests.

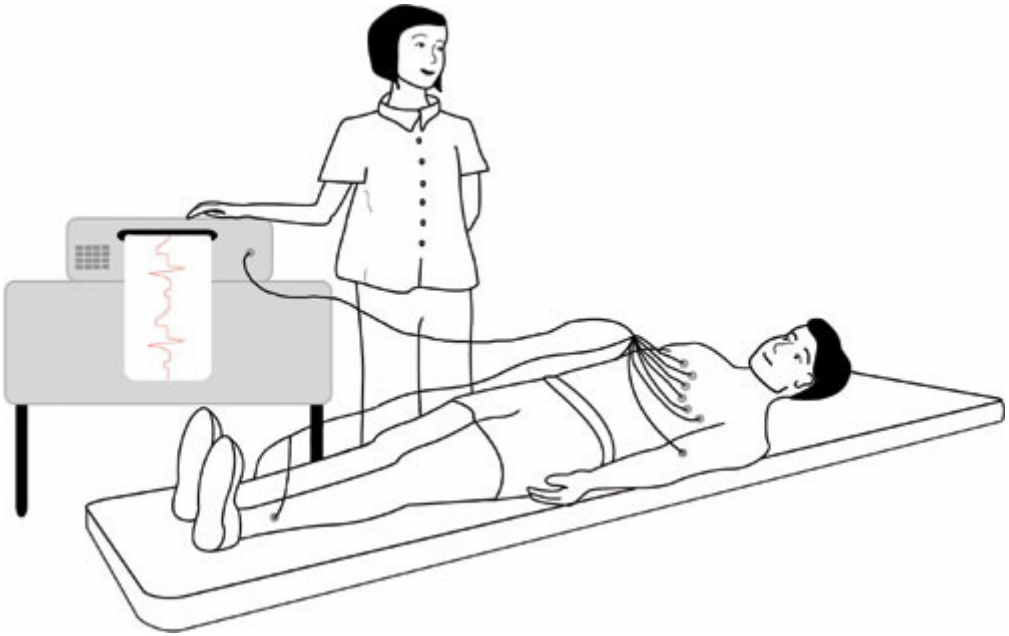
If you are referred because there has been a sudden death in the family a post mortem report will be very useful in tailoring your tests.

Cardiac tests

Electrocardiogram (ECG) - 15 minutes

This is the most basic test. It involves taping electrical leads onto your legs, arms and chest to take readings of the electrical activity of your heart.

These are printed out onto a piece of paper for the doctor to examine.

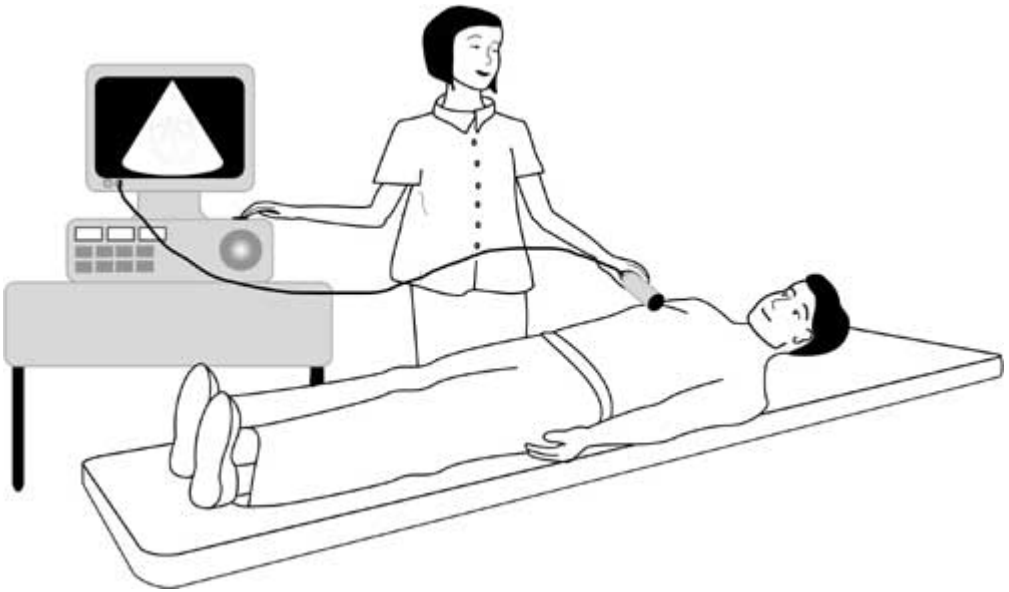


Signal averaged ECG - 30 minutes

This is an ECG that adds together the electrical readings from at least 250 heartbeats so that any very small variations can be seen – for example if the electrical impulses in the heart are being conducted more slowly.

Echocardiogram (Also called an 'echo') – 45 minutes

This test uses ultrasound waves to look at the structure of the heart. It is useful for people whose ECG shows changes that could be caused by heart disease including inheritable conditions such as cardiomyopathy.



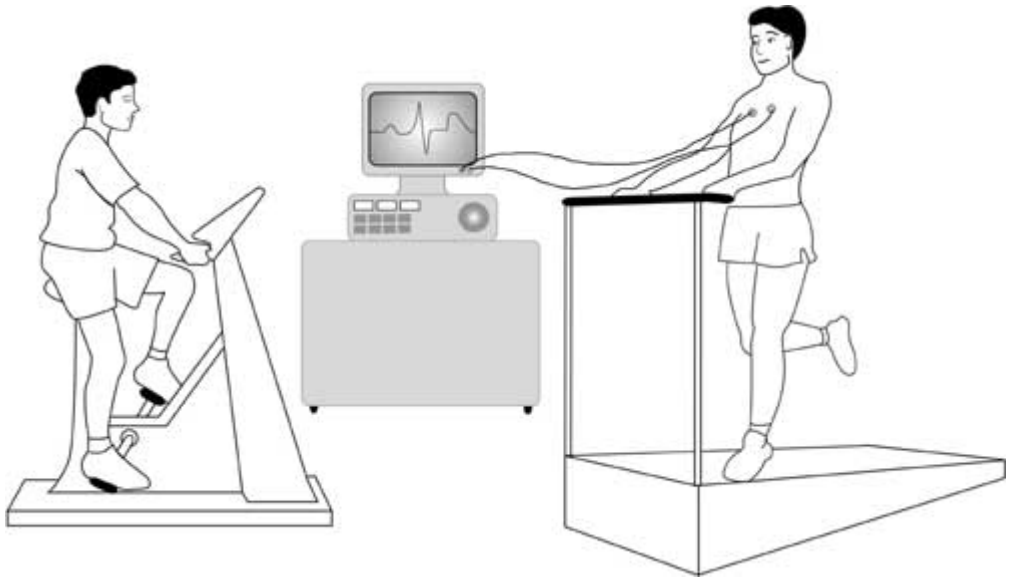
The operator puts some clear gel on your chest and then places an ultrasound probe on it. The probe sends ultrasound beams into your body and their reflections are detected and used to generate images of the heart.

You can see different parts of your heart on a screen as the probe is moved around on your chest.

The test is similar to the ultrasound scan that is used to examine a pregnant woman's unborn baby. It is completely painless.

Exercise test (Also called an exercise ECG) – 45 minutes

This test is the same as the ECG but is recorded before, during and after a period of time spent exercising on a treadmill or an exercise bike. This allows the doctor to examine any changes in the electrical patterns that occur with exercise, and analyse any abnormalities.



Cardiopulmonary exercise test

You may also be asked to undergo a cardiopulmonary exercise test. This test analyses the efficiency of the heart muscle by measuring the amounts of oxygen your body uses during exercise.

You will be asked to breathe into special equipment while you are exercising. If the efficiency of your heart is low, this may suggest that you have cardiomyopathy (inefficient pumping action of the heart).

Electrical leads from the ECG machine are taped to your body and you are monitored while you exercise either on an exercise bike or treadmill.

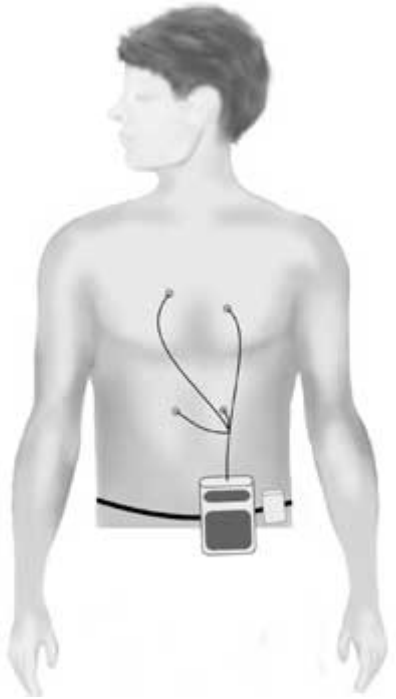
If you are having a 'cardiopulmonary exercise test', your doctor will ask you to breathe in and out of a special piece of equipment while you are doing the exercise, in order to monitor how efficiently your body uses oxygen.

Holter or 24 hour tape – 20 minutes

The Holter is a recording device that comes in two different forms:

- a small portable tape recorder (like a walkman), or
- a small digital device the shape of a pager.

You wear the device on a belt round your waist. ECG leads from the device are taped to your chest. The device records the electrical activity of your heart for 24 to 48 hours, or for up to 7 days if a digital one is used. The doctor can then analyse the electrical activity and rhythm of your heart to find out if you have any arrhythmias or some of the other features of inherited heart disease.



Cardiomemo and event recorder

These are more sophisticated versions of the basic Holter. Whenever you have an attack of symptoms, you can activate the device to record your heart's rhythm. (You can also do this with the digital Holter.) The advantage of the cardiomemo is that it doesn't have any leads, so you can just place it on your chest when you get symptoms, without having to put any leads in position.

Provocation tests (Ajmaline, epinephrine and adenosine tests)

You may be asked to have an ajmaline test if your doctor suspects Brugada Syndrome. While you are having an ECG test you will be given an injection of ajmaline, an antiarrhythmic drug. The test may show changes on the ECG that are typical of the Brugada syndrome.

A fine plastic tube is inserted into a vein at the front of your elbow. The drug is injected over a short period of time (5-10 minutes) and you will be monitored for 20 minutes. There is, however, a risk in 1 in 200 Brugada Syndrome carriers or their immediate blood relatives of causing a potentially life-threatening arrhythmia during the injection. The test is therefore always performed with appropriate facilities to protect patients from this risk.

Epinephrine may be given in a similar way if your doctor suspects the long QT syndrome.

Adenosine (another short-acting chemical) is given under the same circumstances if Wolff-Parkinson-White Syndrome (WPW) is considered a possible diagnosis.

Cardiac magnetic resonance (CMR) scan

This is a special kind of scan used to examine the structure of the heart and the nature of its muscle. It uses a magnetic resonance scanner that creates intense fluctuating magnetic fields around your body while you are inside the scanner. This generates the signals that make up the pictures produced. It is very useful for detecting the presence of heart muscle disease.