

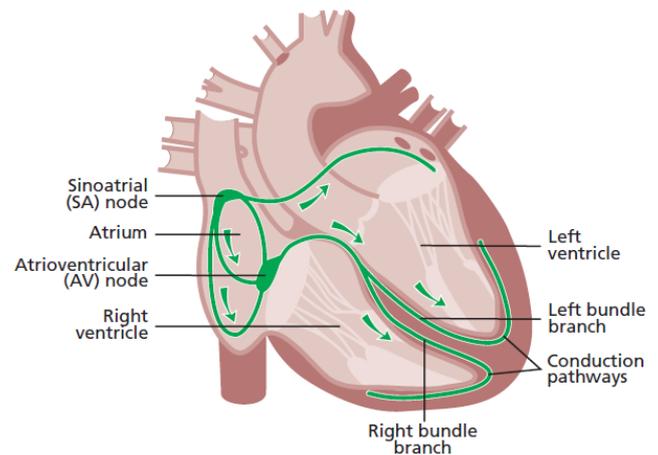
Ajmaline provocation test: information for families

An ajmaline provocation test is carried out to diagnose a specific condition called Brugada syndrome. Brugada syndrome is an inherited heart condition caused by a change in a person's DNA. People with Brugada syndrome have an increased risk of developing abnormal heart rhythms known as arrhythmias. This information sheet explains about ajmaline provocation tests, what is involved and what to expect when your child comes to Great Ormond Street Hospital (GOSH) for the test.

The heart is a special kind of muscle which acts as a pump to keep blood moving around the body. The pumping action of the heart muscle is triggered by electrical impulses which pass through the walls of the heart, causing them to contract.

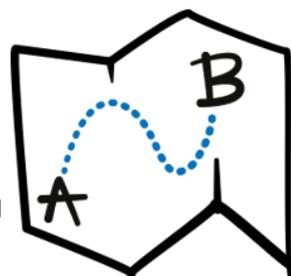
A specialised area of heart tissue called the sinoatrial (SA) node is the starting point for each electrical signal through the heart. The electrical impulse travels through the walls of the top chambers of the heart (the left and right atria), causing them to contract and squeeze blood downwards into the bottom chambers of the heart (the left and right ventricles). The impulse stops briefly at the atrioventricular node (AV node), before passing into the walls of the ventricles.

As it moves through the ventricles, it causes them to contract and pump blood out of the heart. The right ventricle pumps blood to the lungs, while the left ventricle pumps blood to the rest of the body.



What is an ajmaline provocation test?

The genetic change causing Brugada syndrome alters the way that electrical signals pass through the heart, giving affected individuals an increased risk of arrhythmias. Arrhythmias make the muscle walls of the heart contract in an abnormal and ineffective way, resulting in symptoms such as fainting, palpitations (heart flutter) and dizziness.



Unfortunately, in some cases, Brugada syndrome may cause sudden death in undiagnosed individuals. It is therefore important to detect the condition early so that individuals at higher risk can be identified and treated.

Further information about Brugada syndrome is available in a separate information sheet.

An electrocardiogram (ECG) is a routine test which measures electrical impulses as they pass through the heart. Brugada syndrome is associated with a typical pattern on the ECG, and in some people this is sufficient to make a diagnosis. However, this pattern may not be present all the time and an ECG on its own is therefore not enough to rule out the possibility of Brugada syndrome.

Ajmaline medication can be used to provoke these typical ECG changes in people with undiagnosed Brugada syndrome. The ajmaline is introduced into the bloodstream through a drip in your child's arm while their ECG is being closely monitored. If the ECG begins to follow the typical Brugada pattern during the test, a diagnosis can then be made.

Why does my child need to have an ajmaline test?

The cardiologist may have suggested an ajmaline test for your child for a number of different reasons:

- Your child may have experienced symptoms which are similar to those associated with Brugada syndrome
- There may be a family history of Brugada syndrome affecting a close relative
- A member of your close family may have died suddenly, with an unexplained cardiac arrhythmia as the most likely cause

Booking an appointment

Once the cardiologist has recommended an ajmaline test, you will receive a telephone call from the Inherited Cardiovascular Disease Team to arrange a suitable date for the test to be done. When the appointment has been booked, we will send you a letter confirming the date and time of the test.

Ajmaline tests are currently carried out once a month, usually on a Wednesday morning. If you book an appointment for an ajmaline test and later find that you are not able to attend, please inform the department as soon as possible. Sometimes we can offer the appointment to another child on the waiting list.

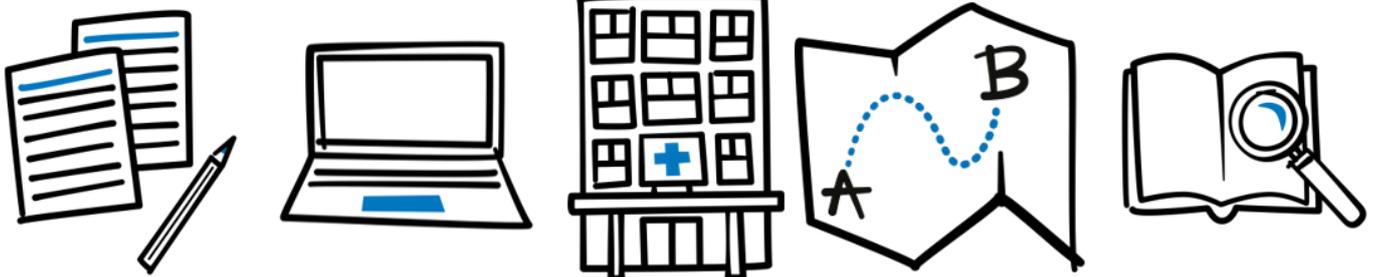
The day of the test

There is no special preparation needed for an ajmaline test. Sticky sensor pads will be applied to your child's chest area to record the ECG, so it would be helpful if they could wear a loose t-shirt or top that can be removed easily.

Please arrive on Walrus Ward (Level 1 Morgan Stanley Clinical Building) at the time stated in the appointment letter. You will meet a healthcare assistant who will insert a cannula (a thin, flexible plastic tube) into a vein in your child's arm so that the ajmaline medicine can be delivered directly into the bloodstream. They will use a small needle to introduce the cannula, but this will be removed as soon as the cannula is in place. Local anaesthetic cream or cold spray can be used to numb the skin beforehand so that this does not feel too uncomfortable.

The test

You will be able to stay with your child throughout the test. An ECG technician will apply some sticky sensor pads to your child's chest, which they will then connect to the ECG machine. You will be



able to see the picture of the heart tracings on the screen. The ECG technician will be monitoring the recordings throughout the test.

The doctor will inject a small amount of ajmaline medicine through the cannula over a period of a few minutes. Once they have given the injection, your child will be monitored closely for around 10 to 15 minutes.

Some patients complain of unusual side effects from the ajmaline medication, but these usually pass very quickly. These side effects include feeling a warm flush and tingling skin, having a metallic taste in the mouth and a sensation of needing to pass urine. All of these feelings only last a minute or two and they quickly subside. The test will stop when the full dose of ajmaline medicine has been given. If your child feels unwell or if abnormal rhythms are seen on the ECG, the test will be stopped early.

Are there any risks?

There is a very small risk that a child with undiagnosed Brugada syndrome may develop an arrhythmia during the test. As soon as the doctor sees any abnormal heart rhythms on the ECG, they will stop the test to reduce the risk of this progressing into a dangerous rhythm. Some people are allergic to ajmaline but every precaution will be taken to prevent or stop an allergic reaction. Medical support and equipment is always available to treat your child immediately in the unlikely event that they should become unwell during the test.

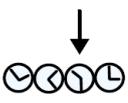
After the test

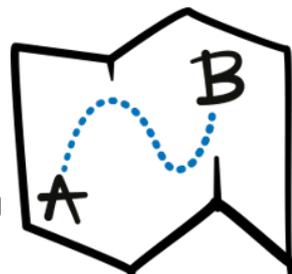
The technician will remove the sensor pads and if no further tests are planned, your child will be free to go home. The doctor will discuss the results of the test with you before you go home and you will receive a letter from the doctor within a couple of weeks to summarise the result of the test in writing.

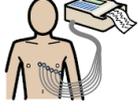
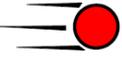
Further information and support

If you have any questions, please ask your child's doctor or nurse

Having a heart provocation test

	<p>You are coming to hospital for a test to check your heart. An ECG looks at the electrical signals that make your heart pump. This helps the doctors decide how to look after you.</p>
	<p>Your heart may work normally most of the time. This means that just having an ECG may not show up any heart problems.</p>
	<p>The doctors may have to give you some medicine to make the signals in your heart work in a different way. They can look at these signals to work out what is wrong.</p>



	You will have a cannula (thin, plastic tube) in a vein in your hand.
	You will need to take off your top.
	We will put some stickers on your chest. We will connect the stickers with wires to the ECG machine.
	We will give you a small amount of medicine into your cannula.
	You might feel a bit hot.
	Your heart might feel like it is beating very fast.
	The doctor will watch the ECG machine closely to see the different signals. When they have seen them, the test will stop.
	We will take off the stickers and you can get dressed. We will take out the cannula as well. You can then go home.
	Please ask us if you have any questions.

