

Having an ablation

Information for patients, parents and guardians

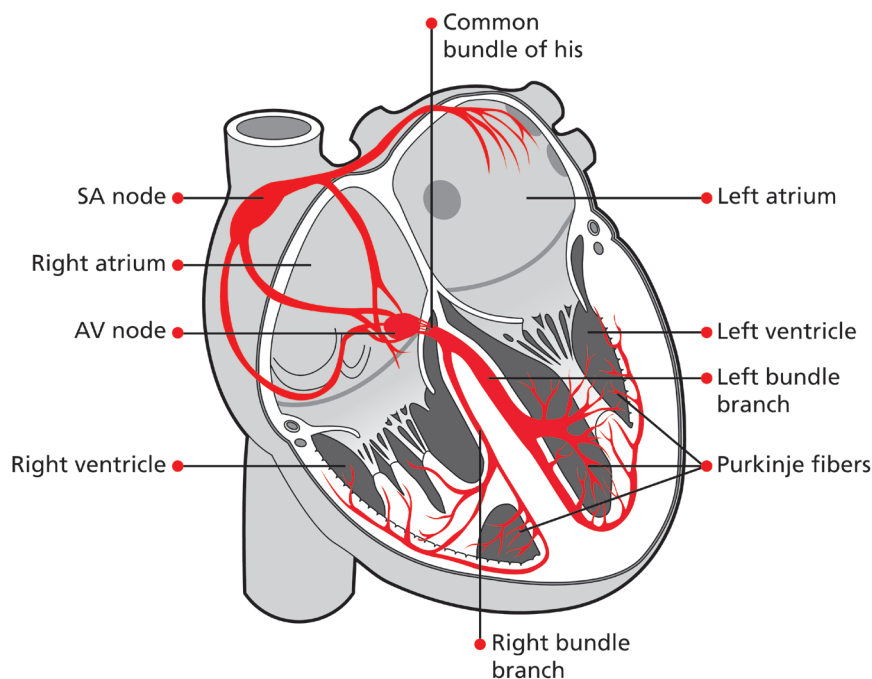
Your child's doctor has recommended that your child has a procedure called an ablation.

An ablation is a treatment for an abnormal heartbeat. It is given under general anaesthetic, using thin, soft wires and hot or cold energy. It works by carefully blocking the problem area of the heart and interrupting abnormal heart rhythms.

We've written this leaflet to help answer some of the questions you might have about your child having an ablation. If you have any other questions that aren't covered in this factsheet, please contact the cardiac nurse specialist team on telephone: **023 8120 4659**.

How the heart works

The heart has its own electrical conduction system.



The conduction system sends signals through the heart's upper chambers (right atrium and left atrium) and lower chambers (right ventricle and left ventricle). This makes the heart beat in a regular, coordinated rhythm.

The conduction system is made up of two 'nodes'(groups of cells):

- the sinus or sino-atrial node (SA node)
- the atrioventricular node (AV node)

These nodes contain conduction cells and special pathways that carry the signal to make the heart beat.

A normal heartbeat begins when the SA node, fires an electrical impulse in the right atrium. The SA node sets the rate and rhythm of the heart and is known as the heart's pacemaker.

The electrical impulse from the SA node spreads through the right atrium and left atrium, making them contract and squeeze blood into the ventricles. The electrical impulse then reaches the AV node which acts as a gateway. It slows down and regulates the impulses.

As the impulse travels down the pathways into the ventricles, the heart contracts and pumps blood around the body.

The cycle then begins again.

A normal heart beats in a regular pattern at a rate appropriate for the child's age. This is called sinus rhythm.

Arrhythmia

The heart's rhythm can change if the conduction pathway is damaged or blocked, or if an extra pathway exists.

The heart may beat too quickly (known as tachycardia), too slowly (known as bradycardia) or irregularly. This may affect the heart's ability to pump blood around the body.

These abnormal heartbeats are known as arrhythmias. Arrhythmias can occur in the right atrium and left atrium or in the ventricles.

What is ablation?

To make your child's heart beat normally again, we need to block the extra pathway or group of cells that is causing their arrhythmia.

Ablation is a technique where the doctor uses a small amount of energy to block the cause of the arrhythmia. This energy will either be from radiofrequency (hot) or cryoablation (cold).

What happens on the day of the ablation procedure?

In your child's appointment letter, you will be given an arrival time and some instructions about the day of the procedure. Your child will not be able to eat or drink for six hours before the operation.

Tests

Your arrival time will be a few hours before the procedure. You and your child will need to come to the ward so that we can do some tests to prepare your child.

Your child will need to have an electrocardiogram (ECG), which is a test of the heart's rhythms and activity. They may also need to have a chest x-ray, blood tests and an ultrasound of the heart (echocardiogram).

Consent form

The cardiologist will meet with you before the procedure to discuss the risks in detail and ask you to sign a consent form.

Please feel free to discuss all your questions and concerns. You will also meet the anaesthetist who will look after your child during the procedure.

General anaesthetic

Your child will have their ablation procedure in the cardiac catheter laboratory at Southampton

General Hospital.

Before the procedure begins, the anaesthetist will give your child a general anaesthetic, so they will be asleep during the operation.

We will need to put a small tube (cannula) into a vein in your child's arm or hand to give them medicine during the operation. This is usually done while they are asleep.

You can be with your child until they have the anaesthetic and are asleep. You can wait on the ward while they have the procedure and then join them in the recovery room when they wake up. The procedure usually lasts for several hours.

The ablation procedure

The doctor will apply the hot or cold energy through a catheter (thin, soft wire).

The catheter is inserted through a blood vessel on one side of the groin. This enables the doctor to apply the energy directly onto the area that is causing of the arrhythmia in the heart.

The hot or cold energy creates scar tissue which blocks the cause of the arrhythmia. The normal conduction pathway takes over and the heart rhythm returns to normal. Any arrhythmia symptoms should stop.

We will also use x-ray screening during the procedure.

The ablation technique has a high success rate and has been used to cure many different types of arrhythmias. Some people may need to have several ablations to cure their arrhythmia.

For a small number of cases, ablation is not successful and further procedures or medications may be necessary.

Preparing your child for the procedure

You can help to prepare your child for the ablation procedure.

What to do

If your child takes medication to control their heart rhythm, the admission coordinator may advise you to stop this five days before the ablation procedure. This allows the doctor to make a better assessment of their heart rhythm.

Stopping medication can cause symptoms to return. If you have concerns about this, please contact us on telephone: **023 8120 4659**.

Older children and teenagers will need to shave their groin area the day before the procedure.

What to say

By talking to your child in advance, you can give them time to talk about any questions or concerns. Children tend to be more co-operative and at ease when they understand what is happening to them.

- Give truthful, factual information, such as, 'Your heart is not beating as well as it should'.
- Explain why they need to go into hospital.
- Explain any tests they may need to have, such as blood tests, an x-ray or a heart scan. Our play specialist team can help you think about what to say. You can contact them by calling the cardiac nurse specialist team on **023 8120 4659**.
- (For younger children) Explain that they will have a deep sleep while the doctor does the procedure and that they won't feel anything. There is an excellent video about this on the UHBristol channel on YouTube called 'A little deep sleep': www.youtube.com/watch?v=BWsQTPyLiMk

Risks of the procedure

Ablation is a safe procedure for both adults and children. However, as with any procedure there are potential risks. The risks will be fully explained by the doctor in the clinic and before your child has the procedure.

All the risks listed below can be treated and are rarely life-threatening.

- **Bruising and bleeding**

Bruises and bleeding in the groin are common after the procedure. They usually disappear within a week and do not cause a problem.

- **Palpitations during the procedure**

It is common to experience palpitations (extra heartbeats) during the procedure, because of the catheter electrodes stimulating the heart. The heart will usually return to its normal rhythm very quickly without needing further treatment.

Very occasionally extra treatment (cardioversion) is needed. This is where a defibrillator is used to send electrical energy to the heart muscle to restore the normal rhythm and rate

- **Palpitations after the procedure**

Your child may experience palpitations on and off for a few weeks after the procedure, until the small scars created in the heart heal. Sometimes, it may feel as if their abnormal heart rhythm is returning, but then suddenly stops. These sensations are normal and they should not be alarmed. You can contact the nurse specialists for advice if this happens.

- **Transeptal puncture**

During the procedure it is sometimes necessary to make a small hole in the heart (transeptal puncture) in order to gain access to the left side of the heart. This hole will usually seal up

quickly after the procedure.

- **Blood vessel damage**

Occasionally the catheter electrodes can accidentally damage the blood vessels when they are moved into position within the heart. In extremely rare cases (less than 1% of patients) serious injury to the blood vessels may require a surgical procedure to repair the damage.

- **Pulmonary embolism or stroke (extremely rare)**

The risk of developing blood clots that travel to the lungs (pulmonary embolism) or brain (stroke) is extremely rare, less than 1%.

- **Cardiac tamponad (extremely rare)**

During placement, it is possible that the catheters may puncture the heart muscle causing blood to collect around the heart. If this happens the doctor may need to insert a drain to remove it. The risk of this happening is less than 1%. This risk increases slightly if the doctor needs to make a transeptal puncture (see above).

- **New arrhythmias (extremely rare)**

Very occasionally, the ablation catheter can damage the heart's own conduction system and new arrhythmias may occur. A rhythm called heart block may develop which prevents the electrical impulses from travelling through the AV node to the ventricles.

If this happens your child may need to have a pacemaker fitted before they leave hospital to maintain a normal, regular heartbeat. The risk of needing a pacemaker is less than 1%.

However, if an extra pathway is located close to the AV node there is an increased risk of between 1 and 2%. A pacemaker is a small battery-operated device that sends out electrical signals to start a heartbeat when your heart is beating too slowly.

Success rate

The ablation procedure does not always successfully stop the arrhythmia.

The success rate depends on where the problem is within the heart. The doctor will discuss the success rate of your child's particular procedure with you on an individual basis before you sign the consent form. If the procedure is unsuccessful it may be possible to repeat it at a later date.

What happens after the procedure?

Once the operation is complete, we will take your child to the recovery area and you will be able to join them there once they're awake. You'll both be taken back to the ward where the nurses will check your child regularly for the first few hours after the procedure.

On the ward

Your child will need to rest for a few hours to recover from the sleepy feeling of the anaesthetic. During this time the nurses will need to record their ECG, check their blood pressure and pulse, and feel their foot pulses regularly. The nurse will also need to check their groin for any bleeding.

It is important for your child to remain in bed and avoid bending the leg where the puncture was made for two hours after the procedure. This is to prevent any bleeding from the puncture site. After this time, they will be able to get up and move around. They will be able to eat and drink normally as soon as they return to the ward.

The cannula from the operation will need to remain in their hand until they are ready to go home.

Your child may need to have some additional investigations after the procedure such as an

x-ray or repeat heart scan before they can go home.

Your child may feel bruised around their groin where the catheter has been passed. The nurse can give your child paracetamol to relieve this.

Going home

In most cases, you will be able to take your child home on the day of the procedure. Your doctor will usually discuss the results and ongoing treatment plan with you and your family after the procedure.

If the doctors decide your child needs to stay on the ward overnight after the operation, one parent or guardian can stay with them.

Caring for your child's wound

Your child will have a small dressing on the puncture site that can be removed the next day. Keep the area clean and dry until it has healed.

If you notice any swelling, redness or oozing please let your GP know. Your child should not soak the wound in water (such as in a bath or swimming pool) until one week after the procedure.

When can my child go back to their normal activities?

Your child's doctor or nurse will talk to you before you go home about when your child can return to their normal activities.

Your child should be able to go back to school within a few days. For the first week after their procedure they should avoid:

- lifting heavy objects
- PE
- swimming
- other energetic activities, such as gymnastics, horse riding and jumping on a trampoline

This is to help prevent any bleeding from the groin wound and to allow it to heal.

Follow-up care

We will send you a letter about your child's follow-up appointment in our outpatient clinic.

If your child is normally seen at the John Radcliffe Hospital in Oxford, the team there will contact you after your child leaves hospital to arrange that appointment. Our doctors will write a detailed letter to your child's GP describing their hospital stay and treatment.

Cancellations

Unfortunately we do sometimes have to cancel procedures.

If this happens to you, we will always try to explain the reason. We fully appreciate that this is a stressful time for you and your family and we will do our best to provide you with a new date that is convenient for you as soon as possible.

Contact us

You can contact us from home for more advice using the following contact details:

For University Hospital Southampton patients:

Children's cardiac nurse specialists

Monday to Friday, 9am to 5pm

Telephone: **023 8120 4659**

Ocean ward

24 hours, 7 days a week

Telephone: **023 8120 6470**

For John Radcliffe Hospital patients:

Cardiac nurse specialists

Monday to Friday, 9am to 5pm

Telephone: **01865 234985** or **0300 304 7777**

Bleep: **4170**

Email: **orh-tr.ccnsoxford@nhs.net**

Useful links

www.heartrhythmalliance.org/aa/uk/catheter-ablation

If you need a translation of this document, an interpreter or a version in large print, Braille or on audiotape, please telephone **023 8120 4688** for help.

www.uhs.nhs.uk/childrenshospital

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