

# Having a transcranial Doppler ultrasound scan (children with sickle cell disease)

## Children's Outpatients

Information for Parents & Carers

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## Introduction

Please read your appointment letter carefully to check time, date and which hospital you must go to for your appointment. This leaflet tells you about your child's scan. Please read it carefully as it contains important information and instructions.

## What is transcranial Doppler (TCD) ultrasound scan?

A transcranial Doppler (TCD) ultrasound scan is a painless examination of the arteries (blood vessels) which supply blood to the brain using sound waves which are beyond our normal range of hearing (ultrasound). This is similar to an ultrasound machine used in a pregnancy scan.

The ultrasound probe (transducer) is the part of the machine that is in contact with the side of your child's head during the scan. The transducer produces the sound waves that build up pictures of the arteries which can be seen on a screen.

The machine also uses something called the Doppler effect to measure blood flow through the blood vessels, which at times you may hear as a 'whoosh-whoosh' sound. The blood flow is also seen on screen as colour or waveforms.

There are no known side effects from having an ultrasound scan.



**Health information and support is available at [www.nhs.uk](http://www.nhs.uk)  
or call 111 for non-emergency medical advice**

Visit [www.leicestershospitals.nhs.uk](http://www.leicestershospitals.nhs.uk) for maps and information about visiting Leicester's Hospitals  
To give feedback about this information sheet, contact [InformationForPatients@uhl-tr.nhs.uk](mailto:InformationForPatients@uhl-tr.nhs.uk)

## **Why does my child need a transcranial Doppler scan?**

In sickle cell disease, arteries (blood vessels) in the brain can sometimes be damaged by the sickled red blood cells sticking to the walls of the artery which causes it to narrow and potentially close up. The narrowed blood vessels can reduce blood flow to areas in the brain leading to damage of brain tissue and cause a stroke.

Children with sickle cell disease are therefore at an increased risk of developing a stroke. Luckily this is quite rare.

A transcranial Doppler scan allows us to detect any narrowing in the blood vessels. Research has shown that we can screen and treat children with this problem, before a stroke develops. All children aged 2 to 16 years who have sickle cell anaemia or sickle beta thalassaemia will be offered a scan.

## **What happens during the scan?**

You and your child will be taken into a room where the scan will be explained to you and you will have the opportunity to ask any questions that you may have. Your child will need to be awake and lie down on a couch. You will be able to sit alongside them.

A water-based gel is applied to the side of your child's head near the ear, and a small ultrasound probe (transducer) is placed over this area. When blood flow is detected you will hear a "whoosh-whoosh" sound.

The scan is painless. You may need to reassure your child during the scan to help them stay still and relaxed.

A play specialist will be working in the Children's Outpatient Clinic and will be able to help prepare your child for the scan if needed. They can offer activities to keep your child still and relaxed during the scan.

## **How do I prepare my child for the scan?**

No preparation is needed for the scan. Your child may eat and drink as normal.

## **Who will be doing the scan ?**

A specialist in vascular ultrasound (clinical vascular scientist) will carry out the scan.

As we are a teaching hospital, students may also be in the room. If you do not want any students to be in the room during your appointment, please let us know.

## How long will it take?

This will vary for each child and depend on how well they keep still during the scan. It may take from 10 minutes to 30 minutes. We try to do the scan as quickly as possible but also making sure that all the information that we need is obtained.

## What happens after the scan?

The gel can be wiped off and you can go home.

Sometimes your child's scan may be part of a Children's Outpatient Clinic appointment. If so, you will need to wait in clinic after the scan to see your paediatric haematology consultant to discuss the scan results and any follow-up appointments.

## How do I get the results and what do they mean?

The result may be discussed with you during the scan or discussed with you afterwards in clinic by your consultant.

The results will be reported by the clinical vascular scientist and given to the paediatric haematology consultant who has asked for the test.

The results can be normal, conditional or abnormal:

- A normal result means that nothing needs to be done now, but the test will be repeated each year.
- A conditional result will mean that the scan should be repeated within 1 to 3 months.
- An abnormal result means that there is an increased risk of having a stroke in the future. If the result is abnormal, the scan will be repeated within 1 to 2 weeks and other tests may be arranged, such as an MRI (magnetic resonance imaging) scan. This will be explained to you by your consultant.

If you are unsure how to get your results please ask a member of staff after the scan.

## What are the risks and limitations of a TCD scan?

There are no known risks with having a TCD scan.

We may not be able to perform the scan if your child is unable to remain still for the duration, or if the ultrasound waves cannot pass through their skull bone to create the picture of the arteries.

## What are the benefits of TCD screening?

If an examination shows a severe narrowing of the arteries, treatment can be started to improve the flow of blood to the brain such as a blood transfusion. This can prevent your child from developing a stroke in the future.

## Special requirements

If you have any special needs relating to a disability or need language or communication support, please call the telephone number given in your appointment letter as soon as possible so we can make appropriate arrangements to help support you.

## Can I bring a friend or relative with me to my child's appointment?

You may wish to bring a friend or relative to with you. This may be useful if you do not speak or understand English very well, or if you or your child have any special needs. However, they may not always be allowed into the examination room with you.

If you are bringing other children with you, please note that we do not offer childcare facilities and hospital staff will not be able to look after other children during your appointment. Please bring another adult who can supervise any other children if needed.

## Are baby changing facilities available?

Baby changing facilities are available. Please ask a member of staff who will be happy to direct you.

## Shops and refreshments

Refreshments including hot/ cold drinks and snacks are available in the hospital. Please ask a member of staff for directions.

## Contact details

### For patients of Leicester's hospitals:

Main switchboard:	0300 303 1573
Children's Outpatient Clinic:	0116 258 5147
Children's outpatient appointments:	0116 258 6225
Clinical Nurse Specialist:	07958 010060

**If you are a patient at another East Midlands hospital and you have been referred to a Leicester hospital for this screening, please see your appointment letter for contact details and any queries you may have.**

## Further information

East Midlands Sickle Cell and Thalassaemia Network: [www.emstn.org](http://www.emstn.org)

## How to give us your feedback

If you wish to make any comments about your visit to the Children's Outpatient Clinic or if you have any suggestions about how we can improve our services, please speak to a member of staff.

If you have any questions, write them down here to remind you what to ask when you speak to your nurse/ doctor/ consultant:

[illegible]

اگر آپ کو یہ معلومات کسی اور زبان میں درکار ہیں، تو براہ کرم مندرجہ ذیل نمبر پر ٹیلی فون کریں۔  
على هذه المعلومات بلغة أخرى، الرجاء الاتصال على رقم الهاتف الذي يظهر في الأسفل

જો તમને અન્ય ભાષામાં આ માહિતી જોઈતી હોય, તો નીચે આપેલ નંબર પર કૃપા કરી ટેલિફોન કરો

ਜੇ ਤਸੀਂ ਇਹ ਜਾਣਕਾਰੀ ਕਿਸੇ ਹੋਰ ਭਾਸ਼ਾ ਵਿਚ ਚਾਹੁੰਦੇ ਹੋ, ਤਾਂ ਕਿਰਪਾ ਕਰਕੇ ਹੇਠਾਂ ਦਿੱਤੇ ਗਏ ਨੰਬਰ 'ਤੇ ਟੈਲੀਫੋਨ ਕਰੋ।

Aby uzyskać informacje w innym języku, proszę zadzwonić pod podany niżej numer telefonu

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If you would like this information in another language or format such as EasyRead or Braille, please telephone 0116 250 2959 or email [equality@uhl-tr.nhs.uk](mailto:equality@uhl-tr.nhs.uk)



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