What is Trans Cranial Doppler (TCD)?
A Doppler machine uses an ultrasound probe (similar to the ultrasound used during pregnancy), to detect the rate of blood flow in blood vessels. Placing the probe over blood vessels (arteries) in the head and neck allows the speed of blood flow to be measured in some of the arteries supplying the brain. If arteries are narrow, the blood travels faster through the narrowed area and makes a higher pitch noise. In most children with sickle cell disease, the Doppler test is normal, but if it is abnormal, we may need to repeat it or do further tests to check all the arteries.

Why test children with Sickle Cell Disease for abnormal blood flow?
In some children with sickle cell disease (HbSS, HbSC, HbS/thalassaemia) abnormally fast blood flow in the arteries of the brain may indicate narrowing. This may reduce the blood flow to part of the brain, and if it is very reduced, it may increase the risk of having a stroke in the future. By doing the TCD test it will help us check that the blood flow is normal. If the blood flow is not normal, we will discuss more detailed tests and treatment options with you.

What will happen when my child has TCD screening?
We will arrange an appointment with you for the test, which is done by the Sonographers in the X-ray Department. The test usually takes about 30 minutes, although with younger children it may take longer. The test is painless, but your child needs to be relaxed and still during the test. He or she will be awake and lying on a couch during the test and you will be able to stay with him or her. Please contact us prior to the appointment if your child has been unwell.

Where does my child go for the test?
After booking in at the children’s outpatient Haematology Clinic, you will be directed to the X-ray Department located on the ground floor (follow the skeletons/ducks from outpatients to X-ray).

What happens after the test?
The results will be reported to the doctors in the Haematology Clinic. If the test is normal, we will simply plan to repeat the test every year or so. If the results show fast blood flow, indicating possible blood vessel narrowing, or do not give clear results, we will probably arrange another TCD test within a few weeks. We may also arrange other scans as well. We will talk to you and explain what the results mean and what treatment options are available.

Are there any risks?
There are no known risks accompanying the TCD test.

Are there any alternatives?
The TCD test provides unique information about the flow of blood in the arteries supplying blood to the brain, however, other investigations include magnetic resonance imaging and angiography (MRI and MRA).

If I have any other questions, who should I contact?
The Haematology Team in Glasgow are always available to answer your questions. You can contact them via:

| Clinical Nurse Specialist – Ruth Bissell | 0141 452 4474 |
| Schiehallion Day Care Unit - 0141 452 4475/6 |
| Haematology secretary – 0141 452 6505 |
To contact your local Haematology Team, you can do so on the following:

<table>
<thead>
<tr>
<th>Location</th>
<th>Contact Information</th>
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</thead>
<tbody>
<tr>
<td>Aberdeen</td>
<td>Assessment Unit - 01224 550309</td>
</tr>
<tr>
<td></td>
<td>Haematology secretary – 01224 553564</td>
</tr>
<tr>
<td>Dundee</td>
<td>Jenny Milne (Children’s nurse) - 01382 740092</td>
</tr>
<tr>
<td></td>
<td>Secretary - 01382 636345</td>
</tr>
<tr>
<td>Edinburgh</td>
<td>Ward 2 day care - 0131 536 0764</td>
</tr>
<tr>
<td></td>
<td>Haematology secretary – 0131 536 0433</td>
</tr>
</tbody>
</table>

**Traveling expenses**
You may be eligible to claim travelling expenses when escorting your child to their TCD appointment. You can claim if you are in receipt of any of the following benefits: Income Support, Working tax credit, Pension Credit, Job Seeker’s Allowance or if you are on a low income. You will be required to provide evidence of this. In all other situations, please contact your own health boards Cashier Office/General Office before your clinic appointment to discuss your travel expense claims.

**Queries and concerns**
The Health Rights Information Scotland is a service that offers support, information and assistance to patients, relatives and visitors. They can also provide help and advice if you have a concern or complaint that staff have not been able to resolve for you. The address is:

Health Rights Information Scotland
NHS 24
Golden Jubilee National Hospital
Beardmore Street, Clydebank
G81 4HX
Helpline: 0800 22 44 88
Email: nhs.inform@nhs24.scot.nhs.uk

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**Scottish Paediatric and Adult Haemoglobinopathies Managed Clinical Network**

**Trans Cranial Doppler (TCD) Ultrasound– Information Leaflet**

As part of the care of your child in the Haematology Clinic, we are now offering TCD as a regular screening test starting at the age of 2-3 years. By using screening tests, such as blood tests and TCD, we aim to detect and treat any problems at an early stage.

**Royal Hospital for Children**
1345 Govan Road
Glasgow. G51 4TF

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