

# East of England Neonatal Operational Delivery Network

## **Parent information leaflet: Direct Coombs Test**

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East of England  
**Neonatal**  
Operational Delivery Network

Collaborative working to deliver high quality care to our babies and their families

### *What is a Direct Coombs Test?*

A Direct Coombs Test (DCT) is a laboratory test that detects whether there has been a reaction between the blood groups of a mother and her baby.

### *What is a blood group?*

Babies can inherit their blood group from their biological parents. Blood group is determined by the type of proteins which are attached to the surface of red blood cells. There are eight blood groups.



### *Why is my baby's Direct Coombs Test positive?*

Small amounts of a baby's blood can enter the maternal blood circulation during pregnancy. If a baby has a blood group that is different to his/her mother's blood group, the mother's immune system will detect the baby's blood as "foreign". This leads to production of maternal antibodies against the baby's red blood cells. These antibodies can cross the placenta and enter the baby's bloodstream. They can then "stick" to the baby's red blood cells, causing them to be broken down more quickly than they should be. This is called haemolysis. The Direct Coombs Test detects the presence of these antibodies.

### *Why is it important to detect whether my baby has a positive Direct Coombs Test?*

Babies who are DCT positive are at risk of their red blood cells being broken down too quickly. This can cause some babies to become anaemic or jaundiced. Both conditions can be dangerous for babies, but with monitoring, they can be detected and treated early.

#### ➤ *What is anaemia?*

Anaemia occurs when a baby's red blood cell count drops. One cause of this is breakdown of red blood cells by antibodies in DCT positive babies. Anaemia may not be present at birth but can develop over the first few days to weeks.

#### ➤ *What are the signs of anaemia?*

Babies who are anaemic often appear pale. They may also be sleepier than usual or floppy, breathe rapidly, have long pauses between breaths, poor feeding or weight loss.

#### ➤ *How is anaemia diagnosed?*

We can take a blood sample from your baby to monitor for anaemia.

#### ➤ *How is anaemia prevented and treated?*

If a baby is DCT positive, we usually prescribe a vitamin called folic acid. This helps the body to replace the red blood cells that have been broken down and aims to prevent or limit anaemia. In severe anaemia, a baby might need a blood transfusion to top-up his or her red blood cell count. This is unusual.

#### ➤ *What is jaundice?*

Jaundice is a common condition in newborns. It is caused by high levels of a naturally-occurring substance called bilirubin circulating around the body. High bilirubin levels can be a result of several factors, but one possible cause is the breakdown of red blood cells, of which bilirubin is a by-product. If the red blood cells are

broken down more quickly than the bilirubin can be cleared from the baby's body, the levels rise and the baby can become jaundiced.

➤ *What are the signs of jaundice?*

The most common sign of jaundice is yellow discolouration of the skin. This starts in the face and can progress down the body. In babies with darker skin, jaundice might be less obvious but good places to look are the whites of the eyes, the gums, the soles of the feet and the palms of the hands - all of which can appear yellow.

At low levels, jaundice often does not cause any problems. At higher levels, babies may be sleepy, floppy or have poor feeding. If the jaundice levels become very high, the bilirubin can affect and damage the brain.

➤ *How is jaundice diagnosed?*

We can usually see when a baby is jaundiced because we can look for the signs described in the previous point. However, we do not rely on this and we can measure jaundice levels precisely using a skin probe or a blood test.

➤ *How is jaundice treated?*

Depending on the baby's gestation and age since birth, we have different thresholds at which we need to treat jaundice. Some babies only require monitoring. If babies need treatment for their jaundice, the first step is to commence phototherapy (blue light treatment), which helps the body to clear bilirubin. At very high jaundice levels, other treatments may be needed.

*What happens next if my baby is DCT positive?*

- The first step is for us to examine your baby and perform a blood test to check their full blood count and jaundice level before you are discharged home.
- We will commence folic acid supplementation to help your baby to regenerate red blood cells.
- Your baby will need a repeat blood test at 1 week of age to monitor their full blood count. We will also repeat their DCT. Depending on results, further blood tests may be needed. Your Consultant will let you know the result and the plan.
- Your baby will be seen in Baby Clinic in six to eight weeks' time.

***Are there any long-term problems associated with my baby's Direct Coombs Test being positive?***

As long as we detect and treat any anaemia or jaundice promptly, there are no long-term consequences of your baby having had a positive DCT. Your baby's body will gradually remove maternal antibodies and these are usually gone by 2 months of age.

***Importantly:***

Even if your baby's initial blood tests were reassuring, it is possible for jaundice and anaemia to develop or worsen after discharge home. Please monitor for the following symptoms in particular:

- ❖ **Your baby appears pale, yellow or their skin or eye colour looks different to usual**
- ❖ **Your baby is sleepy or floppy**
- ❖ **Your baby is not feeding well**
- ❖ **Your baby has rapid or laboured breathing or long pauses between breaths**

**In an emergency always call 999.**

**Otherwise, contact 111 or your midwife / health visitor during working hours.**